

UNIVERSITY OF KWAZULU NATAL

**ENVIRONMENTAL DESIGN, CRIME AND VULNERABILITY: A CASE
STUDY OF WENTWORTH**

BY

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DECLARATION

I Raencine Kathlyn Aboo declare that,

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- (ii) This dissertation/thesis has not been submitted for any degree or examination at any other university.
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ABSTRACT

Apartheid environmental design and planning was aimed at controlling people rather than emphasising safety and security. This resulted in disadvantaged townships becoming conducive to crime and other social problems. In order to address this problem emphasis has been placed on the role of planning and design of the environment in reducing crime. Thus, the Crime Prevention through Environmental Design (CPTED) model has been suggested as one way of reducing crime and managing the physical environment. The model contends that reducing and preventing actual and perceived crime will improve the quality of life of residents and create quality living environments. This study examined the relationship between crime and planning and design in the Wentworth community, situated in the South Durban Basin of Kwa-Zulu Natal, South Africa. A key question was, how the design and planning of the physical environment could directly influence an increase or decrease in safety and vulnerability in Wentworth. This study found residents were aware of crime in the community and did not feel safe. Crime and victimisation was associated with areas that exhibited poor planning and design. In addition, crime hotspots were concentrated around these areas. An analysis of the specific planning and design problems within the Wentworth, indicates that modifying the environment using various design measures will reduce crime and vulnerability. Residents' responses regarding the use of the various CPTED principles to address crime were positive. Local government is tasked with implementing the model in the community, yet only a few projects have actually incorporated it. While officials contend that they are actively engaging in crime prevention, residents' believed that not enough is being done to lower crime, and improve the quality of life. A key issue is that besides crime practitioners, planners are also central to implementing the CPTED model, as it incorporates planning and design. However, lack of cooperation between these individuals has resulted in planners unknowingly using the model in urban renewal and regeneration projects. While this reflects the innovative use of the model, it also highlights the limited use of CPTED in targeted crime prevention initiatives. However, a positive outcome of this use is that even though urban renewal and regeneration projects aim to create quality environments, and not directly influence crime, by virtue of using CPTED, they are also indirectly influencing a decrease in criminality and fear.

Key Words:

Crime, crime prevention, environment, fear, safety and vulnerability

ABBREVIATIONS

ABM	Area Based Management
CCTV	Closed Circuit Television
CP	Crime Prevention
CPTED	Crime Prevention through Environmental Design
CSF	Community Safety Forum
CSIR	Centre for Science and Industrial Research
ID	Improvement District
IDP	Integrated Development Plan
NCPC	National Crime Prevention Council
NCPS	National Crime Prevention Strategy
NGO's	Non-government Organizations
P&D	Planning and Design
RAT	Routine Activities Theory
RCT	Rational Choice Theory
SA	South Africa
SCP	Social Crime Prevention
SCS	Safer Cities Strategy
SDB	South Durban Basin
SDCEA	South Durban Community Environmental Alliance
S-R	Stimulus Response
QUAL	Qualitative
QUAN	Quantitative
UN	United Nations

URS	Urban Renewal Strategy
UNODC	United Nations Office of Drugs and Crime

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CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Apartheid style planning and social engineering resulted in segregated South African communities (le Roux, 2005). As a result, apartheid planning and design policies, like the Group Areas Act 41 (1950) (used to spatially segregate communities based on race) (Maharaj, 1997; Vermeulin, 2004), was used as an instrument to manipulate the movement of people rather than to ensure safety and security (CSIR and ISS, 1997). Displacement and forced relocations resulted in numerous poorly serviced Black communities becoming disadvantaged. During the apartheid era, environmental planning and design encouraged aesthetics and sense of ownership within elite White communities. Black townships were located at the outskirts of cities, which were conducive to crime and other social pathologies, based on the configuration of the built environment (Spinks, 2001; Donaldson, 2001).

South Africa's (SA) urban centres have been experiencing high levels of violent crime both pre and post-apartheid era. Nevertheless, an examination of crime data indicates changes in the nature and extent of these incidents, during both eras' (Shaw, 1997). There was anticipation that crime and violence would decrease after the end of apartheid. However, the opposite occurred, with serious and violent crimes having replaced apartheid political crimes (Pelser and de Kock, 2000). Ikejiaku (2009) explains this phenomenon by stating that during the 1950s apartheid was entrenched within South African society; as a result, crime was high, but was based on political and social instability. In contrast, in the post-apartheid era, the nature and extent of serious and violent crimes increased dramatically because of the socio-economic inequalities associated with the legacy of oppression and exploitation.

Inequality, coupled with poverty and unemployment, serve as a causal factor of crime. The distribution of services and welfare across communities has been uneven and influences criminal activity (Weatherburn, 2001). Research on crime and victimisation also indicate, that the previous apartheid styled planning and design of communities has had negative consequences on crime (Breetzke, 2008), especially within black

communities. However, even though crime and victimisation were seen as being inherently linked to the planning and design of the environment (Lemanski, 2006), the social and physical environments were not always viewed as overlapping causal factors (Pain, 2000).

Nonetheless, some geographers, criminologists and policymakers realised the significance of crime and its relationship to place (Eck and Weisburd, 1995; Weisburd, 1997). The understanding of crime and place, has developed in parallel to the study of the geography of crime and environmental criminology (Louwman, 1986). This was based on the realised that crime cannot be separated from the ecological/environmental and the social (Deklerck, and Depuydt, 2000). Accordingly, Erdogan (2010) indicated that incidents of crime were related to the configuration of the built environment. Similarly, Herbert (1993) argued that there was a relationship between place and crime. Crime occurs in specific areas, and affects those within spatially deprived social locations. In addition, Eck and Weisburd (1995) state that parallel to the planning and design aspect of crime, is the relationship that exists between the fear (of crime), and vulnerability attached to certain spaces, which are deemed to be unsafe.

These arguments have led some geographers and criminologists (Jacob's, 1961; Shaw and McKay, 1942; Newman, 1996; Jeffery, 1999) to examine the influence of spatial planning on crime. One such approach is the use of urban planning and design in crime prevention (Shaw, 1998). Related to this is, the focus on areas where crime thrives. Areas called 'crime hotspots' (Weisburd *et al.*, 2009). Crime hotspots, are driven by the existence of a suitable environment in which offending can occur, together with attractive targets and the lack security or guardianship (Wang *et al.*, 2012). The identification and mapping of the spatial characteristics of these concentrations of crime, provide information about the distinct crime typologies that may exist in a particular area (Wang *et al.*, 2012). More importantly, geospatial mapping also assists in comparatively understanding the nature and extent of crime, within and outside a hotspot. A significant result of studying these hotspots, has been the development of spatial initiatives in crime prevention.

1.2 MOTIVATION FOR THE STUDY

Crime undermines the safety and security of citizens. Controlling and preventing crime is important for improving the quality of urban life. According to the United Nations (UN), a prosperous city is productive, environmentally sustainable, enhances quality of life, promotes equity and social inclusion, and provides infrastructural development. The UN defines quality of life as "*enhancing the use of public spaces to increase community cohesion, civic identity, and guarantees the safety and security of lives and property*" (UNHABITAT, 2012: 14). The Crime Prevention through Environmental Design (CPTED) model aims at preventing crime, via planning and design, to achieve such an outcome (Cordner, 2010). CPTED has been built on and used extensively within the United States and Europe, and has yielded positive results (CSIR and ISS, 1997; Kruger and Landman, 2003).

In SA the first policy to outline the purpose of environmental design in crime prevention, was the National Crime Prevention Strategy (NCPS, 1996). This policy was extremely significant for the development and application of crime prevention strategies. The NCPS served as a guideline for integrative and holistic crime prevention, that incorporated partnership between government and communities (Naude, 2000). While the NCPS was advantageous for practitioners, it had numerous shortcomings, because it lacked guidance for the practical understanding and implementation of the model (Liebermann *et al.*, 2000). Incidentally, while the NCPS touches on CPTED, it fails to incorporate the full potential of the model, in broader crime prevention discussions.

Various other policies in SA also place emphasis on the use of environmental design and planning in urban safety and security. For example, this study examined the roles of the Safer Cities Strategy (2003), the Urban Renewal Programme (2002), and the Integrated Development Plan (2012/2013) in CPTED implementation. In SA, the CSIR is the leading research institution on CPTED (Kruger, 2005a).

In SA, citizens have called on local government to create safe and crime free spaces and quality living environments (Papadakis, 2010). In an attempt to address these concerns, the eThekweni Municipality has implemented various crime prevention strategies,

including CPTED. Thus, this study contributes to the existing body of knowledge by exploring how planning, design and changes in the built environment, influence crime by reducing vulnerability and increasing safety.

1.3 CRIME TYPOLOGY OF WENTWORTH

Wentworth is historically a coloured community (Hariss, 2006), located in the South Durban Basin (SDB), in the province of Kwa-Zulu Natal (KZN), in South Africa (SA). Residential and industrial areas are juxtaposed in the SDB. The extensive growth in industry around the Wentworth region is evident in Figure 1.1, which demonstrated the proposed industrial nodes of the SDB during the early 1950s. The current industrialisation of the region is depicted in Figure 1.2. This growth of industry is central to the various problems faced by residents of Wentworth, and surrounding areas.

The overlap between industry and residents dates to the pre-First World War era, when Government reclaimed and constructed the Maydon Wharf. This was to become the first industrial node for Durban (Figure 1.2). By the early 1900's industries began to grow toward the south because of its close proximity to the harbour, and the availability of cheap flat land. The South Durban region was a planned industrial zone (Scott, 2003), and by 1939, the Durban Town Council created the Merebank-Wentworth Housing Scheme. This brought in predominantly Coloured and Indian residents to the area, and provided a steady stream of cheap labour for the industrial zone. The scheme resulted in land expropriation, with resistance, from private owners, specifically Indians who were opposed the creation of racial residential zones. This was the precursor to the implementation of the Group Areas Act in Durban (Maharaj, 1997).

Figure 1.1: Early Industrial and Development nodes in the South Durban c1959



Source: Sutherland *et al.* (2009: 5).

Figure 1.2: Wentworth in relation to surrounding communities and industry



Source: Sutherland *et al.* (2009: 8).

The Group Areas Act (1950) resulted in forced removals and mass relocations of Black communities to sterile dormitory townships (Mabin, 1992; Sutherland *et al.*, 2009). Under the Group Areas Act, Coloureds from other parts of the city were forcibly moved to Wentworth. Wentworth was originally set aside for military use and not planned for

mass family occupation (Sharad, 2006; Schutte, 2010). The same happened to the surrounding group areas for Indians (Merebank) and Blacks (Lamontville). This socio-spatial restructuring coupled with the continual development of industry resulted in South Durban residential areas bordering heavy and light industry, buffered by major transport routes (Jones, 1998). This juxtaposition of community and industry (Figure 1.2), coupled with the lack of space and subsequent poor socio-economic conditions have created tensions. Such tensions have increased due to the current Back of Port development, affecting all aspects of sustainability and life in the SDB (Sutherland *et al.*, 2009).

Wentworth forms part of a larger precinct known as the Greater Merewent area. This includes Austerville, Merebank East, Merewent, and Treasure Beach (Sutherland *et al.*, 2009). Given the complexities in the demarcation, official censuses data is captured for the Merewent/Greater Merewent (used interchangeably) and do not specifically explain demographics for Wentworth. However, a recent social impact assessment of the SDB specifically revealed a total population of approximately 30000, mostly Coloured people within Wentworth (Sharad, 2006; Sutherland *et al.*, 2009). The residential area consists of low to middle-income, mostly female-headed households; with a higher ratio of females to males (SDCEA, 2008/2009). Unemployment is a concern with most people having short-term contract employment (SDCEA, 2008/2009).

Wentworth was selected as the study area because of the nature and extent of socio-economic challenges that exist in the community. A comparative overview of Wentworth in relation to the Bluff and Merebank, shows that the area has some serious greater quality of life of concerns, like poor housing, limited or no recreational facilities and the negative impact of the proximity of industry to the community (Nurick and Johnson, 1998). Merewent residents reside in highly dense housing (17 to 22 houses per hectare) or in overcrowded flats (sometimes 15 people per one bedroomed flat (Harris, 2006). Among the many problems, a key concern is the extent of crime and violence in the Wentworth community. The combination of issues such as lack of job opportunities, poor socio-economic conditions, pollution and health problems has made the community vulnerable to crime and victimisation (Sparks 2006; Jaggernath 2010).

Graser and Rankin (1983) conducted a study of victimisation in the Wentworth community and concluded that crime was higher in Wentworth than the surrounding areas due to the deprived conditions of the community, as a result of apartheid. Fourteen years later, Nurick and Johnson (1998) conducted a quality of life study in the SDB and also found that crime was a concern for residents of Wentworth. They cite social and spatial indicators as having negative influences on violence and hampering quality of life for residents. Nine years later the local government, SDB Area Based Management (ABM) offices, conducted a similar quality of life survey. Their survey also found that crime was a particular concern for Wentworth residents and negatively influenced feelings of safety (UrbanEcon, 2006). Three years on, Sutherland *et al.* (2009) undertook a social impact assessment, which revealed similar findings of the previous studies. Inadequate housing, lack of community facilities, and crime emerged as challenges.

It is interesting to note that a common trend in the various studies cited above is that crime is inherently associated with the conditions of the physical environment. These studies emphasise that over a twenty six year period there has been a failure to address concerns relating to crime in Wentworth. The poor conditions experienced by residents have not changed much and years of criminal activity and socio-economic deprivation have contributed to the community being labelled as a spatial symbol of criminality and delinquency (Breetzke, 2008; Sutherland *et al.*, 2009). These stigmas have reinforced negative criminogenic (factors or characteristics associated with or which produce crime or criminals) perceptions and attitudes of residents and outsiders.

1.4 RESEARCH AIMS AND QUESTIONS

1.4.1 The aim of the study was to

- Examine how the planning and design of the built environment could influence crime and vulnerability, with specific reference to the implementation of the CPTED (Crime Prevention through Environmental Design) model, in the community of Wentworth.

1.4.2 The objectives of the study were to

- Analyse the effect of apartheid planning and design in the management of urban space.
- Understand the influence of planning and design on crime.
- Assess whether the CPTED model is a feasible for crime prevention in the Wentworth community.
- Determine the role of local government in crime prevention.

1.5 PARADIGMATIC PERSPECTIVE

The interpretive paradigm influenced this study. This paradigm assumes, that the construction of reality is through social reactions and relationships. In this manner, every individual's social construction of reality will be different. Maree (2007) argues that within this paradigm the view of social constructions is without objectivity, because it presumes that social constructions of reality, is based on subjective interpretations, allowing the researcher to explore the meaning people attach to their experiences. This paradigm therefore aims to understand reality by studying and interpreting it from the standpoint of the research participant. Clark and Creswell (2008) argue that objectivity, however, is vital to ensuring the unbiased interpretation of realities or experiences during the research process. To accomplish this, the researcher needs to create ties with the community to realise the diverse viewpoints and interpretations of experiences that may emerge. In keeping with this paradigm, the study used a mixed method approach, incorporating a case study design.

1.6 STRUTURE OF THE THESIS

This thesis is divided into five chapters. Following the introduction, chapter two addresses the various theoretical underpinnings of the CPTED model and its development to date. The model, developed in 1971 by architect C. Ray Jeffery, has been influenced by the work of various other theorists and researchers. The chapter explores the influence and reviews the five principles of its implementation. In addition, it explains how crime prevention theorisation developed to include urban safety and security via planning and design. The chapter provides an overview of the relationship

between crime (and fear) and planning and design. Implementation of CPTED is discussed from an international perspective, and within a South African context, it also outlines the policy directive for the implementation of CPTED using various case studies. Lastly, the chapter considers the role of government in the implementation of CPTED and the future of the model, from a standpoint of green, sustainable planning and design.

Chapter three outlines the research design and methodology adopted in the study. The chapter explains the choice in method, design, and sampling technique, and gives details of the instruments used during the various stages of data collection. The chapter also discusses the ethical issues emanating from the field and how these were addressed.

Chapter four presents an analysis of the data. The analysis incorporates the broader conceptual context of knowledge gained from the literature

Chapter five concludes this study by providing a summary of the main findings, which is evaluated in terms of the conceptual framework presented in chapter two. Recommendations regarding the implementation of CPTED within the study are also offered.

1.7. CONCLUSION

Crime prevention within SA is a dynamic issue that requires holistic and interdisciplinary engagement. Changes in crime and criminality are related to space and time. Hence, the roles of spatial or place-based crime interventions have become vital. Situational and environmental prevention models, like CPTED, aim to manipulate and alter environments by deterring its criminal potential, improving quality of life and reducing crime.

Integrating CPTED with other current crime prevention strategies and programmes requires a critical evaluation of the model and its practical application. Therefore, the study explores the feasibility of CPTED to reduce crime through changes in the built environment, within the post-apartheid context of the Wentworth community.

CHAPTER TWO: CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

2.1 INTRODUCTION

This chapter analyses and discusses various studies exploring the relationship between the environment and criminal activity. The literature review reflects on the scholarship, focusing on the study of crime and place. Section 2.2 to 2.8 primarily focuses on the development of the crime prevention through environmental design (CPTED) approaches and the subsequent model.

A critical analysis of the model is presented by discussing the use and shortcomings of the model. In addition, a comparative examination of the model demonstrates its evolution from focusing on crime prevention to addressing urban sustainability. In the context of understanding place-based crime prevention, an overview of the geospatial analysis of crime and its relationship to CPTED is also presented. To give emphasise to the feasibility of CPTED, the influence of the environment on safety, fear and crime are discussed. Lastly, an international perspective on CPTED strategies and applications are reviewed.

Section 2.9 to 2.14 specifically details the use of CPTED in South Africa. This discussion begins by examining the influence of apartheid on the socio-spatial landscape. Thereafter the causes and analysis of crime are presented, followed by a detailed exploration of the various policies central to crime prevention and the implementation of CPTED. Drawing on various local studies, the chapter presents key issues in the implementation of the model by the government to reduce crime and improve quality of life. In this regard the ability to restructure the landscape using models like CPTED is discussed with reference to gated versus non-gated communities. The chapter concludes, by drawing on the literature and contextualising the key points in context of the broader study.

2.2 URBAN SPACE, VIOLENCE AND FEAR OF CRIME

The planning and design of cities play an integral role in shaping urban environments. The manner in which this unfolds determines crime and victimisation (UNHABITAT, 2007). Muggah (2012) explains that this rapid growth and expansion of urban landscapes is associated with poverty and violence. The majority of people affected by this tend to be marginalised, poor communities (Rodgers, 2009). There are five characteristics used to define urban violence, in terms of the environmental influence on crime, the definitions address the 'spatial and social characteristics' (Muggah, 2012). This definition, when assessed in context of fear of crime, point to a host of factors, linked to space, that either inhibit or induce crime and violence.

Fear of crime is broadly defined, as an emotional response to threat (Pain, 2000). Studies investigating criminal activity and the environment, attribute crime and fear to various factors and differences in socio-economic and physical conditions (Pain, 2001; Ingle, 2007; Beall and Fox, 2009). In terms of the environment, unsavoury social activities are associated with the disorder and the vulnerability of public spaces (Cordner, 2010).

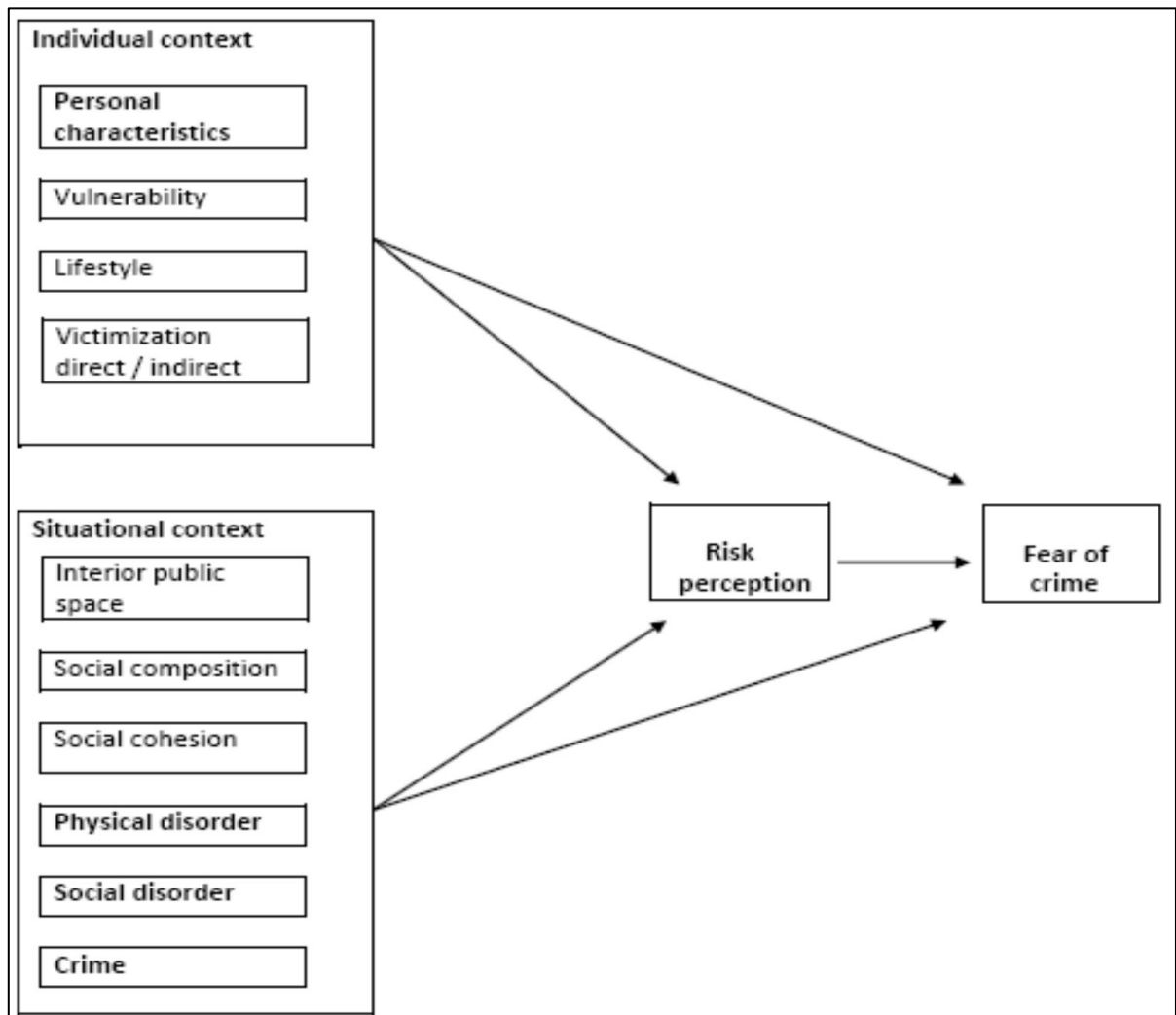
Physical and social disorder negatively affects fear of crime, because an increase in the levels of these problems similarly heightens levels of fear (Vlaskamp, 2011). Perry *et al.* (2006) explain this by stating that beyond fear, perceptions of crime also affect the lives of residents' just as much as actual crime. For example, both victimisation and the transmission of others' perceptions (one person's crime fears communicated to another)¹ of crime influenced fear. Though it is certainly normal for victims' experiences to increase feelings of fear, Austin *et al.* (2002) suggest that actual crime and victimisation are only part of the individual and neighbourhood variables influencing fear.

Using the conceptual model of Oppelaar and Wittebrood (Figure 2.1), Vlaskamps' (2011) explains how individual (social) and situational/neighbourhood (spatial) characteristics influence fear and crime. In terms of the individual context four variables (personal characteristics, vulnerability, lifestyle and direct or indirect victimisation)

¹ According to Schweitzer *et al.* (1999) fear of crime is just as problematic as being a victim or witness to crime.

determine perception of risk and thus fear. Schweitzer *et al.* (1999) argue that demographics such as age, gender, race, income, educational status and other variables influence fear (Figure 2.1). Hence, changes in the demographic composition of communities will influence feelings of fear (Austin *et al.*, 2002; Vlaskamp, 2011).

Figure 2.1: A conceptual model of fear by Oppelaar and Wittebrood



Source: Vlaskamp (2011).

Regarding the situational context six variables (interior public space, social composition, social cohesion, physical disorder and crime) determine risk and fear (Figure 2.1). It is noteworthy that the social composition of communities is a broader theme that incorporates aspects of individual variables. This is a key relationship because it indicates the overlap between the individual and situational causes of fear. This relationship is aptly explained by Muggah (2012), using an example of a feminist

critique of the social and physical design of cities. He states that the development of the city (situational) can influence gendered (demographic/individual) patterns of fear. Like suburbanisation, patterns of labour and mobility to and from city centres, and public transport, reflect the needs of men and pay little attention to women (Muggah, 2012). His explanation points to the notion that planning, design and the subsequent development of urban spaces, is both gendered, and trigger fear and security concerns for certain groups.

Suggested strategies for addressing urban violence, crime and fear, are CPTED and urban renewal projects. In doing so, the focus is on the settings of crime, instead of the offender. These include slum upgrades, urban renewal and local level intervention programmes for uplifting environments. It also includes rebuilding social cohesion and inclusion to increase residential control over space for users (UNODC, 2007; Muggah, 2012). In this way manipulating the environment reduces its criminal potential (UNHABITAT, 2007).

Instituting and implementing such projects requires an enhancing of urban governance (UNHABITAT, 2007). This necessitates targeted urban planning, in a local context, from a top-down approach, that considers the relationship between the socio-spatial features of urban landscapes. However, effectively addressing crime (and fear of it) using such strategies, entails acknowledging that the structures of the built and physical environment influence opportunities for crime (UNHABITAT, 2007).

2.3 CONCEPTUAL AND THEORETICAL CONTEXT

The study of crime and place is not new. Environmental criminology is the study of crime and victimisation as they relate to space. Unlike other methods of crime prevention, environmental criminology focuses on the crime itself and its concentration in space and time (New South Wales Government, 2011). Criminological theories have developed in parallel with geographic studies of crime and environmental criminology. These focus on how the physical environment creates opportunities for crime in specific spatial and social contexts (Weisburd *et al.*, 2009). Crime is multifaceted, and the application of geography within the context of crime prevention has had a significant impact on reducing criminal activity by planning and design (Louwman, 1986).

2.3.1 Conceptualising the study of crime and the environment

One of the first institutions to explore the relationship between crime and the environment was the Chicago School of Thought established in the early 1900s. It was the most prominent school of sociology in the United States (USA), with leading theorists such as Small, Thomas, Mead, Park, Burgess, Faris, Ogburn, and Wirth, Sutherland and Thrasher, Shaw and McKay, Everett and Helen Hughes, and Saul Alinsky, all of whom influenced the study of crime and place (Thabit, 2006). A central focus of the school was studying the city, its spaces, structures, processes and its related forms of crime and offending (Newburn, 2009). Just as the positivistic school of criminology, they adopted an empirical stance. Hence, they based their studies on empirical data collection and analysis as opposed to socially based responses to particular crime events. Their study of the processes in cities was referred to as 'urban ecology'. In other words, humans like nature have particular niches which determine growth and behaviour. Erdogan, (2010: 273) precisely defines urban ecology as, *"attempts to identify those social and physical characteristics of geographical areas that enable and constrain the expression of criminal motivations"*.

One of the first studies examining these processes was Shaw and McKay's (1942) social disorganisation theory. This theory contends that the breakdown of social morals and norms in certain groups influences crime and deviancy (Newburn, 2009). In line with this, Parks and Burgess, theorists of the School, developed a radical idea that cities did not develop in an uncoordinated manner but in concentric zones from the central business district (CBD). They called this the zonal hypothesis theory. Using the concept of urban ecology, they purported that cities grew and developed naturally just as the ecology of nature (Erdogan, 2010).

Their model of cities included five zones, the CBD (Zone 1), the zone of transition (Zone 2), the workers zone (Zone 3), residential zone (Zone 4), and the commuter zone (Zone 5). Their theory contends that each zone comprised of different social characteristics and inequalities that either hindered or allowed crime to thrive (Newburn, 2009). In particular, communities found near Zone 1 and Zone 2 (and some portions of Zone 3) were characterised by high rates of inequality and socio-economic issues.

Other theorists like Shaw and McKay (1942) and Jacobs (1961) support the findings of Parks and Burgess study but argue that deviancy, crime and social problems were not entirely excluded from the other zones. It was just disproportionately concentrated in Zone 2 (Newburn, 2009). The zonal hypothesis theory proposed that patterns of crime and delinquency were predominant in Zones 2 and 3 owing to it being populated by the majority of urban poor. The different characteristics of each zone reinforced the social disorganisation theory by showing that behaviour, attitude and morals varied across different parts of the city. A key finding of Parks and Burgess study was that the environment was integral to understanding the socio-spatial growth and dynamics of cities (Newburn, 2009).

The theorisation of crime and place was extended by the work of Shaw and McKay (1942). They applied the social disorganisation and zonal hypothesis theories, together with crime maps, to their study of the relationship between youth development and deviancy. Similar to the work of Parks and Burgess, they found that crime and delinquency were prevalent in areas, like Zone 2, that subsequently also had the highest social disorganisation (Maltz, 1995). They proposed that rapid changes in the socio-spatial environment in Zone 2 resulted in social fragmentation and thus deviance. Shaw and McKay (1942) also introduced the cultural transmission theory. Using this, they further suggested that in some zones there was a cultural transmission of delinquency from one generation to the other. Notably, this negative subculture of attitudes and behaviours was acquired in relation to one's physical surroundings.

Even though the work of the Chicago School is significant for understanding crime and place, Jeffery and Zahm (1993) are critical of 'urban ecology'. They argue, that the work of the Chicago School seemingly focuses on the environment, but may only address the social ecology of crime. They contend that one cannot discuss crime without awareness of the environment, as it shapes human behaviour. Even so, the work of scholars of the Chicago School highlighted the unequal distribution of crime and deviancy in urban environments. The locations of such activities are linked to the physical and social activities in some spaces. In addition, these adverse behaviours and attitudes are passed from one generation to the next. The work of the Chicago School set the tone for contextualising the influence of the design and planning of urban centres on crime patterns.

2.3.2 Crime prevention through environmental design approaches and theories

The Crime Prevention through Environmental Design (CPTED) approach takes three distinct forms. First, situational crime prevention addresses all types of crime in any spatial setting. Situational approaches also include rational choice (the decision of the offender in committing a crime based on risks vs. rewards), and routine activities (continuous routine of individuals which make them susceptible to crime) theories. Conversely, the next two approaches, defensible space theory and the actual CPTED model specifically focus on the built and physical environments (Clark, 1999).

In the 1960s Jane Jacobs (1961) was studying the urban form of US cities. Jacobs (1961) was critical of the new forms of design (influenced by the architect Le Corbusier), which emerged during this period. This pattern broke down traditional controls on criminal behaviour, and the power of people to watch their environments. It also inhibited the use of public spaces during certain times, and influenced vulnerability (Crowe and Zahm, 1994). Jacobs proposed that the way cities were developing created anonymity for its users. The inability of people to interact reduces the ability to distinguish offenders from non-offenders. She based her argument on the rapid commercial and industrial growth that resulted in some urban zones of the city becoming desolate and plagued by high crime rates and violence, and other societal problems (Sutton *et al.*, 2008).

Responding to this problem, Jacobs proposed security guidelines that could be incorporated into design and planning. This included mixed land use, natural surveillance (increase people's ability to watch their space and thus be aware of possible victimisation) and enhancing resident's ability to watch and protect their environments (territoriality) (Jacobs, 1961). During this same period Elizabeth Woods (1961) and Schlomo Angel (1968) were similarly conducting research on the influence of manipulating the physical environment to increase surveillance. These studies had a significant impact on the development of the CPTED model.

2.3.2.1 The defensible space theory and the CPTED model

In 1971 C.R Jeffery, drawing on the work of Jacobs (1961), published a book called 'Crime prevention through environmental design'. He argued that criminologists and sociologists were over playing the role of the social causes of crime and that they should move away from the traditional focus on the offender to the environment (Crowe and Zahm, 1994; Clark 1999). In other words, criminologists should shift prevention theorisation that involved deterrence, punishment and courts and explore ways of changing the environment to change behaviour and reduce crime (Jeffery and Zahm, 1993).

Behaviour is the focus of crime prevention, Jeffrey used a basic theory of behaviour (as found in psychological learning theory) to explain that the environment must be studied with considerations of the actions of the individual in space and vice versa. He used a stimulant-response model (S-R), which involves the association of a stimulus (environment) with a response (behavior) to explain that the response of an individual in an environment is based on the product of the brain. The brain in turn is a product of genetics and the environment (Jeffery and Zahm, 1993). Hence, altering the environment would change the product (behavior) stimulated from the brain. In terms of environmental responses to crime, this could entail changing the feelings of vulnerability or the action to offend.

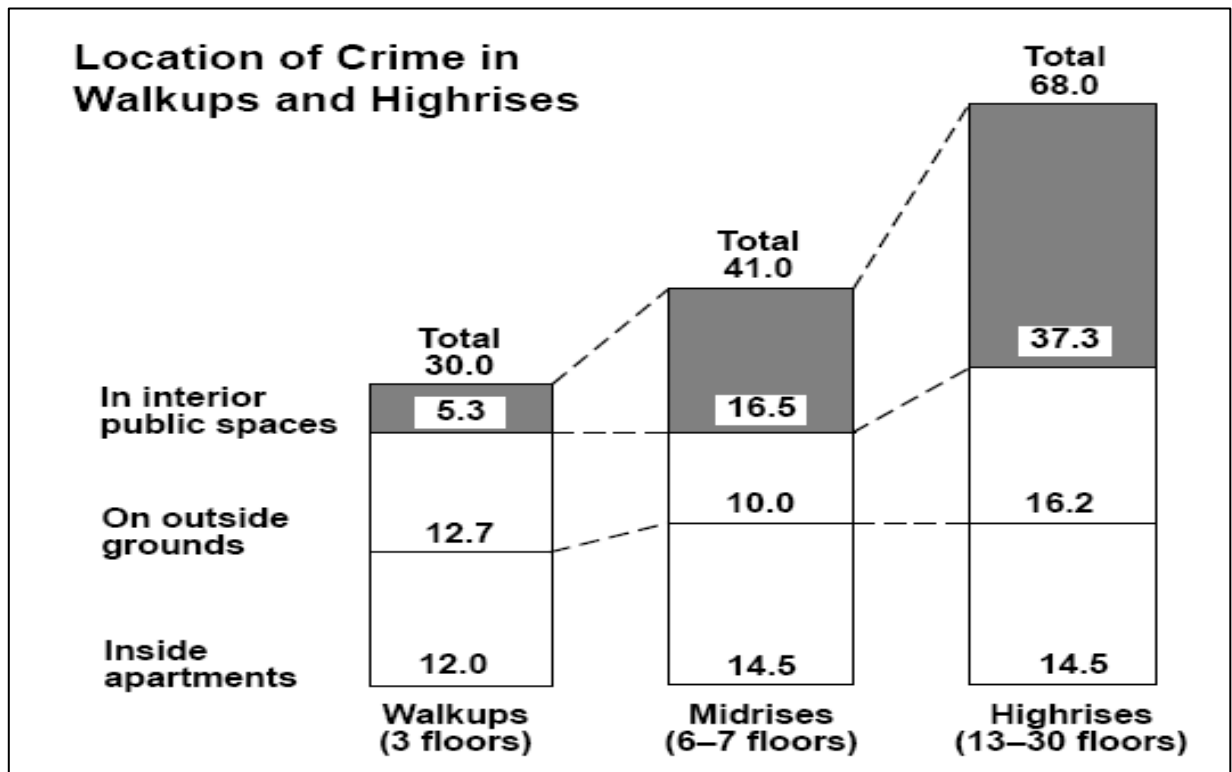
Jacobs (1961) and Jeffery's (1971) theorising reflected the changing characteristics of the urban landscape during the early 1900s. Cities were changing and expanding to accommodate the increased use of transport. This 'automobile era' resulted in the development of transport networks that created corridors or pockets of spaces, which encouraged criminality (Crowe and Zahm, 1994). Dispersed cities are the opposite of previous models such as Parks and Burgess zonal hypothesis theory (characterised by the compact concentric growth of cities). Dispersion leads to the spatial and temporal distribution of people and property, hence the uneven scattering of crime (Crowe and Zahm, 1994). Increased unprotected spaces will result in crime because of the existence of a vulnerable a target, an offender and the lack of proper planned, managed or protected environments (Kruger and Landman, 2003).

Jeffery indicates that despite the fact that the name of his book was used as an acronym for CPTED, he did not develop his principles of CPTED until the 1980's (Jeffrey, 1999). Also, even though his work was significant for criminology, it was ignored by criminologists. Robinson (2013) reasons that Jeffery's book called for increased crime related research, while governments were looking for practical approaches for addressing crime. Also, he never provided a guide on how his S-R model would reduce crime. Although Jeffery's (1971) initial work was largely ignored, it nevertheless shifted the study of crime to consider environmental criminology in prevention (Robinson, 2013). One such example was that of Newman's defensible space theory.

In 1971, an architect Oscar Newman developed the defensible space theory. Newman (1996) concentrated on the architecture of apartment buildings and its negative impact on the quality of life and safety. Figure 2.2 illustrates his critique of high rise apartments, showing that the inhuman scale of buildings, the lack of aesthetics and location of the developments in crime prone areas was detrimental to the safety of residents. Similarly, to Jacobs, he argued that large apartment buildings increased anonymity of residents and made it difficult for residents to determine actual home owners from outsiders, thus posing a threat to safety (Crowe and Zahm, 1994).

Newman (1996) proposed that although the inside of each apartment was viewed as private space, the outside was viewed as 'public' space and not the responsibility of residents. This attitude meant that residents had little interest (or defensible space) in what occurred outside their homes. His subsequent evaluations showed that over time, this lack of defensible space resulted in buildings becoming derelict and neglected. These conditions subsequently bred crime and decreased the quality of life.

Figure 2.2: Graph showing the relationship between the increase in Crime and increased building height and that Crime is mostly located in public areas.



Source: Newman (1996).

Drawing on Jacobs work, Newman suggested that defensible space can be achieved by increasing territoriality, natural surveillance, access control and image and aesthetics (Jeffery, 1999). A key contribution of his work is that he focused on urban planning, design and architecture (Ratcliffe, 2003). The application of his theory was funded by government and extensively applied in the USA in the 1970s to public housing. One reason for the use of Newman's theory as opposed to Jeffrey's initial S-R model, is unlike the latter, he provided an operational guide (using Jacobs concepts) on how the design of spaces could increase safety (Jeffrey, 1999). Newman's idea served as the influence for the second phase of the CPTED model.

Although Newman provided evidence for his work, it was heavily critiqued because defensible space did not allude to how design and management could influence crime prevention. Jeffrey and Zahm (1993), state that Newman's theory was only applicable to residential spaces. Also, his work had little influence on deterring crime or creating defensible space because it excludes biological and psychological causal factors of

crime. Thus, it focuses on social control and does not actually address crime prevention through environmental design.

In assessing Newman's work, Jeffery in 1977 published his second edition of the 'Crime Prevention through Environmental Design' book. He argued that the work of Newman and Jacobs was limited because their sole focus was on the 'architecture of crime'. They did not conceptualise the social and ecological development of the city, thus, creating the assumption that the generic application of architectural design could solve urban crime problems (Jeffrey, 1999). Likewise, the development of space does not simply rely on its landscapes and built environments, but also on the social and physical interactions in it.

Different scholars provide various definitions of the CPTED, in context of their specific studies. However, the delineation proposed by the CSIR concisely includes all aspects of what the model actually intends to address, as applied to CPTED implementation in SA:

The implementation of measures to reduce the causes of, and the opportunities for criminal events, and to address the fear of crime through the application of sound design and management principles to built environments.

(CSIR, 2000a: 1).

Thus, as precisely defined by the CSIR (CSIR, 2000a: 1), crime prevention through planning and design aims to positively influence behaviour, perceptions of fear and vulnerability, and management of environments to reduce actual and future crime.

Although Jeffery and Newman's work made an impact for arguing that crime is related to space, it was heavily critiqued and dismissed by criminologists. There were two important reasons for this critique. First, during the 1970s much of American criminology was still an off-shoot of sociology and biological crime prevention theorising, and revolved around social causes of criminality (Clark, 1999). Therefore empirical and place-based crime prevention models were not viewed as significant. Second, Newman was an architect resulting in criminologists viewing his work as not considerably relevant to criminological theorising (Clark, 1999). However, over the next ten years significant changes were taking place that influenced the re-emergence of CPTED. Clark (1999) indicates that first, new evidence was collected on the

opportunity (theories) of crime. Second, the rational choice and routine activities theories (situational approaches) were developed. Third, more studies were published showing the reduction of crime based on changes in the environment. Lastly, environmental approaches to crime prevention produced less displacement than previously assumed.

2.3.2.2 The broken windows theory

In 1982, the Atlantic Monthly Paper published the work of two theorists, George L. Wilson and James. Q. Kelling, outlining their findings of the 'Safe and Clean Programme' initiated by the in the US during the 1970s. The programme was run in the city of New Jersey in an effort to curb excessive increases in violent crime. To address this problem, police foot patrols were increased in neighbourhoods. A five-year evaluation of the programme found that increasing patrols had not decreased crime as expected. Key findings from the programme was that, first, the frequency of police presence created perceived feelings of safety and resulted in residents taking fewer precautions to safeguard themselves. Second, despite the fact that visible policing reduced deviant behaviour, major crime did not increase or drop, it remained as it was when the programme began (Kelling and Wilson, 1982).

As discussed, Parks and Burgess and Shaw and McKay had significant impact on the study of crime and the environment (Newburn, 2007; Newburn 2009). They argued that criminal activity was prevalent in certain locations, such places were characterised by uncared for and 'broken' environments. A closer analysis of their work shows that in some ways it unknowingly reflects the broken windows theory. Considering the results of the Safe and Clean Programme and influenced by studies of the Chicago School, Wilson and Kelling (1982) developed the broken windows theory. They define it by proposing that in some spaces deviant behaviour when left unchecked (coupled with social disorganisation and lack of territoriality) results in crime (Wilcox *et al.*, 2004).

They expand this definition and argue that a broken window symbolises neglect and lack of interest that eventually leads to disrepair (Kelling and Wilson, 1982). Applying this to communities implies that unmonitored neighbourhood incivility (such as deviant behaviour like public urinating, graffiti and the damage of property) can transgress into

serious crimes (Kelling and Wilson, 1982; Herbert, 1993; Weatherburn 2001; Serewicz, 2009). The responsibility to control these problems lies with communities, because incivilities are generated and exacerbated as a result of the lack of interest by community members, to report deviant behaviour or poor care of an area. In essence, the broken windows theory is partially influenced by CPTED because it examines how the lack of territoriality, causes the progression from deviant to criminal behaviour. This can be preceded or influenced by the deterioration of the environment, further exacerbating criminality and fear.

The theories suggested by Wilson and Kelling (broken windows theory) and Newman (defensible space) influence and draw on the five principles of CPTED. However, both theories are woven into the fabric of the model by implying that certain socio-spatial environments are conducive to crime. In light of this, the CPTED model is holistic because it ascertains that poor design and management of environments, and its associated spaces, creates perceived (and actual) vulnerability (*defensible space*). These spaces also influence a transgression from deviancy to criminality (*broken windows theory*). As a result social cohesion and the sense of territoriality become disconnected because people do not identify with unsafe spaces (Knox and Pinch, 2006).

2.4 THE FIVE PRINCIPLES OF THE CPTED MODEL

Palmary (2001) defines crime prevention as socialisation toward positive behaviour, and crime control as the specific actions taken to reduce crime. Crime prevention can take place in three ways, first, through environmental design, second through social crime prevention and third, through a criminal justice approach. Different prevention strategies have differing implications for the institutional and management arrangements necessary to support specific crime interventions (Weatherburn, 2001). Understanding these varying approaches and their underlying rationale and theory is crucial to developing effective programmes and projects (Eck *et al.*, 2005).

Assorted social and criminal justice models (such as social crime prevention or laws regarding sentencing and deterrence) are not always able to effectively address or control crime and deviancy (Kitchen, 2002). CPTED aims to reduce crime by designing and/or altering the physical environment to reduce the opportunities for crime to occur

(Sutton *et al.*, 2008). It works to control crime and is a conservative crime model (CSIR, 2000b). The conservative model combines the classical criminological theory (emphasising voluntarism and personal responsibility) with rational choice theory (human behaviour is based on the cost or benefit of an action). Crime control uses mechanisms (under the environmental approach) to increase costs and reduce the opportunities for crime, while increasing detection (White, 1998). The CPTED model consists of five principles namely, surveillance and visibility, territoriality, access and escape routes, target hardening and image and aesthetics (Cozens *et al.*, 2005).

2.4.1 Principle 1 - surveillance and visibility

Surveillance can be passive or active. Passive surveillance relates to the ability of residents to watch over their communities. Active surveillance relates to the role of law enforcement, (police officers or people tasked with policing) to watch over communities (Kruger and Landman, 2003). Another form of active surveillance is CCTV (closed circuit television) systems in residential areas/areas where crime is most prevalent. CCTV systems have been the most effective form of surveillance (Kruger, 2005a), because offenders become aware they are 'being watched', thus reducing criminality. However, surveillance relies on visibility and access. Surveillance and visibility, coupled with proper lighting and building design, allow residents to survey their surroundings. Nevertheless, lighting alone does not prevent crime, because if surveillance does not exist even when good lighting does, crime would persist (Oakland Police CPTED Security Handbook, n.d). However, visibility is achievable through the implementation of other principles of CPTED

2.4.2 Principle 2 - territoriality

Territoriality relates to a sense of belonging and thus ownership over the space. Geason and Wilson (1989) state that increasing territorial control helps create a sense of attachment to space by the resident or user. This allows residents to take an interest in activities taking place in the immediate environment. Territoriality is linked to the broken windows theory (Kelling and Wilson, 1982), where limited investment and interest by residents results in incivilities transgressing into crime and victimisation. In addition, Cozens *et al.* (2005: 331) states that territoriality can include:

Different forms of symbolic barriers (e.g. signage) and real barriers (e.g. fences or design that clearly defines and delineates between private, semi-private and public spaces). In addition, other principles of CPTED such as access control and surveillance will also contribute towards increasing territoriality by promoting legitimate users' informal social control.

Ratcliffe (2003: 2) explains this control as physical barriers such as hedgerows, fences and other mechanisms that indicate to offenders that certain spaces are private and protected and not for use by 'outsiders'. It can include attitudes and behaviours that define the *"exclusivity of use, and responsibility for, and control of, activities in the specific location"*. Other methods of increasing territoriality are achieved by upgrading the image and aesthetics of environments. For example², where someone takes pride in their surroundings like homes. This creates a sense of belonging and community. In addition, this will increase territorial control over that environment and a need to protect it, as opposed to where the opposite would apply³.

2.4.3 Principle 3 - image and aesthetics

The view and use of space is related to its appearance, in other words its image and aesthetics. Degraded and neglected areas breed crime and can minimise feelings of security (Kruger, 2005a). Poor management of spaces, results in crime hotspots and further degradation. These also influence negative perceptions and increased sense of vulnerability⁴. Residents in such environments thus become vulnerable to crime. To counter-act this, one solution is the application of targeted urban development/planning through renewal initiatives, like CPTED. These should be managed and sustained over time, and includes creating recreational spaces, parks and green spaces, to prevent the area from becoming degraded and neglected, or turning into spaces associated with fear and vulnerability⁵.

² Plate 2.1 Residential home which is aesthetically pleasing (Appendices One)

³ Plate 2.2 Residential home that lacks aesthetic appeal (Appendices One)

⁴ Plate 2.3 Illegal dumping and build-up of garbage (Appendices One)

⁵ Plate 2.4 Clean parks and recreational (Appendices One)

2.4.4 Principle 4 - target hardening

Target hardening incorporates the use of fencing, burglar bars, gates and walls for protection. It refers to the physical strengthening of spaces in an effort to reduce the potential for vulnerability. This, besides the popular use of CCTV, is the first principle used, as it is easily implemented. However, practitioners should be careful to over-emphasize its role. Target hardening can have negative consequences, for example, closing-off roads to by securing or protecting environments using gates, burglar bars or guards (Kruger and Landman, 2006). In doing so, people become both socially and physically isolated, and segregated. This creates a juxtaposition of the public versus private space, with fear as the driving factor. In addition, using target hardening to 'privatise' space, displaces crime (Kruger *et al.*, 2006). However, implementing the principle is another problem. Incorrect implementation can be negative rather than positive. For example, although the principle calls for the erection of walls, it refers to burglar bar walls⁶. The erection of high solid cement walls⁷ would lead to a reduction in the visibility and can induce crime. Just as the previous principles state, visibility and the ability to survey an area is integral to reducing and/or controlling crime.

2.4.5 Principle 5 - access and escape routes

Certain areas are prone to criminal activity because of the ease with which offenders can gain access and escape through a particular route or area. Contact crimes depend on the availability of access and escapes routes as they act as easy get away routes for offenders. Zones most affected by this are those situated adjacent to vacant open land or concealed areas⁸ (Cozens *et al.*, 2005). Vacant, open pieces of land also serve as access and escape routes, especially in cases where inappropriate land-use zoning results in unused pockets of open space (Kruger *et al.*, 2006). These zones have no defined use and are not routinely maintained. This results in overgrown foliage and becomes a vulnerable spot. Other issues for consideration under this principle, is the juxtaposition of residential areas with transport routes and industrial areas⁹, abandoned buildings and unoccupied pathways adjacent to homes (Kruger *et al.*, 2006). All these create easy

⁶ Plate 2.5 Residential home with burglar bar fencing (Appendices One)

⁷ Plate 2.6 Residential home with high stone wall fencing (Appendices One)

⁸ Plate 2.7 Vacant open space serving as an access/escape routes (Appendices One)

⁹ Plate 2.8 Vulnerable covered tunnel walk ways linking residential areas (Appendices One)

escape and access routes for criminals. This problem can be addressed through increased natural visibility, removal of bush and creation of clear paths of sight, lighting and signage. Other options would include mixed land use, and warning signs for possible victims and offenders, indicating high-risk areas, or surveillance and monitoring of areas (Oakland Police CPTED Security Handbook, n.d). Besides these measures, high-risk areas to regulate use, that serve as access and escape routes can be closed off during certain times of the day, such as public sports grounds and parks.

The five principles above are regarded as tools for implementing CPTED and reducing vulnerability and increasing safety (Kruger and Landman, 2003). The five principles makes reference to the 'maintenance and/or management' of environments to enhance quality living environments and safety. However, they do not indicate how this should occur. As a result, a sixth principle, 'maintenance and management' has been added to the model:

For the upgrading of roads, especially gravel roads, repairing defective street lights and other public lighting, cutting down overgrown shrubs and grass and refuse collection are in a position to execute their duties timeously. Regular communication between municipal officials and the police is essential to ensure that officials are made aware of dangerous areas caused by a lack of maintenance.

(Kruger *et al.*, 2006: 44).

The above quote explains, that the lack of maintenance results in the deterioration of environments and counters the positive aspects of implementing the model. Well managed and resourced maintenance programmes (addressing the issues quoted) would ensure continuous upkeep of environments to give effect to the principles of CPTED.

The above principles (even with the absence of a sixth principle) demonstrate that planning and design strategies can either increase or decrease crime. Also, the way implementation takes place can have either negative or positive outcomes for opportunities for crime. The principles vary from country to country and depend on local crime conditions and environments. Perlgut (1982; cited in Geason and Wilson, 1989: 6) although acknowledging the limitations of the model, advocates the role of management needs to highlight design and layout, so that residents can manage their own spaces. Again, this depends on the degree of understanding of the model and

stakeholder partnership and capacity. Crime is constantly changing, the management and maintenance of the use of CPTED principles in crime prevention initiatives are vital in ensuring the sustainability of the model. It would need to undergo continuous monitoring and evaluation so has to adapt to changing crime trends, environments and societal needs.

2.5 LIMITATIONS OF CPTED

The most common criticisms and limitations of the model are:

- Displacement of crime;
- Limited emphasis on social responses to crime prevention; and
- Over emphasis on target hardening

2.5.1 Displacement of crime

Situational crime prevention models, including CPTED, are argued as displacing rather than preventing crime. Linden (2007) argues that CPTED displaces crime, and merely addresses the symptoms of the problem, rather than addressing the problem itself. However, crime patterns occur because of a number of factors, for instance:

Offender motivation, the absence of legitimate routes to personal satisfaction, the availability of vulnerable targets, the degree of preparation and investment required to commit different crimes, and the perceived consequences of crime commission.

(Barr and Pease, 1990: 277-278).

Barr and Pease (1990) contend that together all these factors determine crime patterns across urban spaces. Displacement may be an unintended effect of situational crime prevention. However, this shift in one way indicates a crime prevented, as a chosen target is protected. Crime displacement takes four forms (a) temporal (the time when a crime occurs, (b) spatial (the space), (c) tactical (using a different method) and (d) the target (different victim). They also propose a fifth form 'perpetrator displacement', explaining that different offenders are always willing to commit crime. Using the example of drug trafficking, they contend that the high profits of the crime ensure a

steady supply of offenders. Challinger (1997) proposes a sixth form of displacement, 'functional' that refers to an offender completely changing the type of crime they commit.

Studies have found that while displacement should be considered when implementing crime prevention initiatives, the diffusion of benefits is more likely to occur than the displacement of crime (Weisburd *et al.* 2009; McLennan and Whitworth, 2008). Challinger (1997) contends that chemist retailers who were experiencing high levels of theft, experienced less incidents after improving their physical security (target hardening measures) and decreased their vulnerability and incidences of crime. However, this consequently led to slightly elevated levels of crime in other surrounding areas, to other retailers who took minimal measures to secure or improve their security. On the other hand, Weisburd *et al.* (2009) argues that their study showed that offenders remained in the same area but changed their method of crime. However, while these studies are cautious not to outwardly suggest that crime is not displaced, they do suggest that policies and policing practices must address these incidents within the hotspots and the surrounding areas. In this way any displacement outside of target areas are considerably diffused (Weisburd *et al.* 2009; McLennan and Whitworth, 2008).

In light of Linden's (2007) argument, the analysis of the CPTED principles indicates that the model aims to address the symptoms of crime and its displacement by changing the spatial (environmental), temporal (time) and tactical (method) displacement of crime. The target (victimisation based on risk factors), functional and perpetrator displacement (offenders rational choice) tend to refer to social causes of crime and are thus, addressed through social crime prevention. These arguments also suggest that situational crime prevention approaches, like CPTED, do lead to some displacement of crime. However, this cannot be the primary basis for why the model should not be implemented. Crime displacement is as a result of the offender moving onto less secure environments, which make criminality possible. The solution to this would be to advocate the use of the model to modify the environment to reduce offenders in various settings.

2.5.2 Limited emphasis on social responses to crime prevention

Hayward (1997) is critical of models like CPTED because they lack reflexivity and fail to consider other extenuating causal factors that contribute to crime. This argument relates directly to the similarities between CPTED and the use of GIS in crime analysis and monitoring. GIS does not consider the socio-economic casual factors of crime, because it determines the location or type of criminal activity, rather than questioning or providing answers to reducing it. D'Angelo (2008) acknowledges that CPTED does not consider 'social' dynamics or address the cause of crime. However, he argues that this can be overcome, if the model is implemented in parallel to other socially based crime prevention models. In addition, although CPTED intends to reduce crime and victimisation, it can also serve as a form of social control by influencing a change in actions from deviant to non-deviant (Louwman, 1986).

2.5.3 Over-emphasise on target hardening

International strategies and guidelines encourage and regulate the use of CPTED, and are well prepared. However, in countries like SA and Asia, prevention through environmental design is still new. Although there has been research on CPTED, the implementation has been limited (Kruger, 2005a). Most projects rely heavily on the target hardening aspect (usually CCTV and burglar guard fencing), thus limiting its capacity by overlooking or neglecting its core principle of planning and design. However, the over-reliance on target hardening is largely the result of the lack of knowledge and understanding of monitoring and evaluation of programmes based on environmental design (Kruger *et al.*, 2006). Crowe and Zahm (1994) are critical of the use of principles of CPTED by professionals who possess little understanding about the implementation of the model. They reason that this can lead to inappropriate applications, causing further social disparities and crime. For example, the misinformed use of target hardening, like using high boundary walls and privatising space, acts as a form of exclusion and social polarisation.

2.5.4 Social and physical control through target hardening

CPTED is also argued, in essence, as a form of social control (of people) through physical design and environmental management. In addition, the over utilization of the target hardening principle creates the perception that CPTED is merely disguised as security, because of its 'privatisation' stance similar to enclaved gated communities. This possibly reduces rather than enhances the quality of life, and displaces crime. However, the model proposes that proper design and the effective use of the built environment can lead to a reduction in the fear and the incidence of crime, and an improvement in the quality of life (Cozens *et al.*, 2005). There is a negative view of target hardening because of the control over spaces and people. However, a closer examination indicates that target hardening and management of space do not aim to close off areas, but to protect them. CPTED as a model does not necessarily advocate security (in the sense of closing off and privatising space as is commonly denoted to the idea of security). It aims to enhance safety (by reducing perceptions of fear, by making environments less attractive for criminality, and creating better living environments) through a variety of planning and design initiatives.

The analysis of the CPTED principles indicates that the model does have limitations. However, the positive outcomes far outweigh the negative. Crime prevention theories are commonly established on the premise that crime occurs because of social factors. In contrast, the premise of CPTED is that the planning and design of an environment determine social interaction and behaviour that can induce crime and victimisation.

2.6 THE FUTURE OF CPTED: GREEN APPROACHES TO SUSTAINABLE URBAN SAFETY, PLANNING AND DESIGN

As evident from the previous discussions, the first generation model (Newman's defensible space) drew on architecture and advocated the creation of privatised space in order to increase territorial control. This focused on the principles of surveillance, target hardening, access control and increased lighting to control the movement of people in and through certain spaces (Saville, 2010). These principles were applied to housing, and the model that emerged was similar to what would now be termed gated or fortified communities. Thus, the application of the model led to spaces becoming overtly

protected, and negatively viewed as a type of social policing through architecture and infrastructure.

Second generation CPTED (Jeffery's model) focused on social dynamics and was community orientated, drawing on Newman's work and influenced by the ideas of Wilson and Kelling (1982) (broken windows theory). The model incorporated community participation, social cohesion and the results of incivilities on crime prevention, resulting in the principle of territoriality. It moved from being a planning and design model based on the foundation of architecture to prevent crime, to one, which included the social and ecological process of space (Saville, 2010). This change was in line with the work of the Chicago School, and resulted in renewed interest in the model. It signifies a postmodern representation of what can be termed the 'risk management society'. The shift to neoliberal governance has created a risk management society, whereby the measurement of risk in advance assists in predicting crime events. CPTED has incorporated this into its principles by adding the concept of land use or environmental management as one of its principles. This will enable practitioners to undertake risk assessments of environments to predict and address crime (Griggs, 2003).

An examination of the models employed by various countries, shows that CPTED is based on a combination of first and second-generation approaches. Saville (1998, 2010) an urban planner specialising in CPTED is credited with tweaking Jeffery's model and creating the third generational CPTED model. This model incorporates renewable and greener spaces by addressing the way cities and spaces grow because of transport, communication and social networks. It emphasises the renewable and sustainable use of land and flow of movement (people and traffic) through environments, and the creation of green spaces.

The third generation CPTED model was introduced in 1997 by Saville and Cleveland. The model aims to reduce fear of crime and ensure quality living environments, through an all-encompassing and holistic green planning, design and development approach. The previous generative model (first and second) acknowledges that CPTED impacts on service delivery and community development, but does not substantiate this with evidence. However, the third generation model has a sixth 'environmental management

and sustainability principle'. This makes provision for long-term monitoring and evaluation of the five other principles and the model as a whole. The continuous rethinking and development of the CPTED model has also created various shifts in its understanding and application, thus making it applicable to issues such as land use zoning, transport and public health (Del Carmen and Robinson, 2000).

Saville (2009) argues that sustainable strategies for crime prevention rarely form part of urban planning and design approaches. He proposes a strategy called the Safe-Growth, which is an integrative planning process that assists in creating safer communities through cohesion and local trust. It also includes communities planning for themselves with experts rather than experts planning for communities to prevent crime. Saville (2009) argues that not only is the approach holistic but it moves away from the traditional prevention through design approach.

2.7 GEOSPATIAL CRIME MAPPING AND PREVENTION

The socio-spatial studies undertaken during the twentieth century also encouraged the use of crime maps. For instance, crime mapping allowed theorists like Robert Parks to understand the characteristics of the urban environment concerning crime from an ecological perspective (Newburn, 2009). This transpired in a shift from focusing on the ecology to the aetiology of crime. This ensured that the spatial relationships of crime became the central, rather than the peripheral focus of analysis. Hence, the interrelationship between criminology and geography has helped in developing an understanding of crime and offenders concerning space.

According to Breetzke and Horn (2006), the spatial ecological study of crime not only incorporates the analysis of the social and the economic conditions of communities, but also the spatial distribution/placement of offenders. Such analysis can be achieved through geographical information systems (GIS), which can be used to spatially map and study crime hotspots and trends (Eloff and Prinsloo, 2009). Crime mapping has had a significant impact on crime prevention because 'place-based or spatial factors' influence crime and victimisation (Newham, 2005). Thus, changes to the built environment based on the spatial analysis of crime have become indispensable in implementing crime prevention strategies (Eloff and Prinsloo, 2009).

According to Weisburd and McEwen (1998), crime mapping is not an isolated understanding of crime trends but requires integrating theory, data, and an understanding of the criminal justice system. Crime mapping was developed and utilised since the 1800s. Its use first originated in France by Andriano Balbi and Andre-Michel Guerry in 1829, and thereafter by Lambert-Adolphe Quetlet who created three maps detailing crime and other variables such as transportation routes, education and ethnicity and other variables (Weisburd and McEwen, 1998). By 1849, the use of crime maps had spread to England and Ireland and was used in a host of crime related research.

The use of maps in research revolutionised the understanding of crime because it could be geospatially 'mapped' to understand patterns and trends. However, the influence of crime mapping was short lived during the early nineteenth century because crime prevention theorising focused on why, and not where, offences occurred (Weisburd and McEwen, 1998). Furthermore, there were many challenges that existed around the mapping process, including the lack of available technology with which to create and store crime maps. The different layers needed for mapping was still developing, and collecting data from large geographical areas was time-consuming and slow. Thus, by the late nineteenth century, the use of crime maps ceased.

Nevertheless, the twentieth century brought renewed interest in the role of crime mapping, which emerged through the work by theorists of the Chicago School. The use of maps of the Chicago School was significant because theorists studied quantifiable data from crime maps alongside qualitative theorisations. For example, Shaw and McKay's studies during the early 1940s used maps of the city of Chicago to study the occurrences of social disorganisation and juvenile delinquency (Anseline *et al.*, 2000). In addition, Thrasher in 1927 used mapping to explore street gangs and distinguished two localities of gang formation. He classified locations where gangs were most prevalent as 'gangland' and the less prevalent zones as 'non-gangland'. Unfortunately, he did not possess the technology to map out the characteristics that distinguished one category from the next (Anseline *et al.*, 2000). Thrasher merely distinguished the different localities of gangs but due to limitations in technology, he could not map characteristic features of each locality to explain the gang formation.

By the end of the twentieth and the beginning of the 21st century, advancements in technology resulted in renewed interest in the role of crime mapping. Technology enhanced the systematic analysis and monitoring of crime to assist in its reduction (Pickles and Urosevic, 2004). Lum (2008) studied the place-based relationship between drugs and violence, in the City of Seattle, USA. He indicated that the spatial routine activities of drug dealers or sellers would overlap between the prevalence of drug use and violence. Using digital maps, he overlapped crime data and conducted a spatial analysis of drugs and violence. He reasoned that certain actions of violence and drug use were concentrated to specific places and times.

Lum's (2008) study illustrates that GIS provides for the analysis of crime trends and the comparison of crime data against other forms of information (economic, social, demographics and other variables.) and assists in revealing crime trends and occurrences (Mamalian *et al.*, 1999; Johnson, 2000). Furthermore, its use can assist in locating offenders in real time. However, criminal activity is not random and there are reasons for when and why it occurs in certain locations. GIS may highlight crime locations but the spatial analysis provides reasons for criminal activity occurring at certain sites.

Nevertheless, even with substantial theoretical and empirical backing, the use of spatial-temporal analysis of crime is still under-developed and under-utilized. Ratcliffe (2010) argues that proactive criminal justice systems require the ability to identify and predict crime hotspots and their concentrations. He suggests crime mapping as one solution, given that its uses go beyond the statistical analysis of crime to implementation and administrative applications of crime prevention strategies. Thus, crime mapping is significant for spatial crime prevention modelling and implementation.

2.8 INTERNATIONAL OVERVIEW OF THE APPLICATION OF CPTED

Internationally the use and development of CPTED is extensive. Cities in the United States, Canada, the UK and Australia have developed strategies or guidelines for CPTED implementation. These include the formation of specialised committees and task teams to guide implementation (Kruger, 2005b; Erdogan, 2010).

In the UK, the Home Office tasked with addressing crime, carried out numerous studies on criminal behaviour and its relationship to urban spaces, and addressed crime prevention through a practical, placed-based approach (Newman, 2009). Besides its practical use, CPTED has been built into and strongly supported by local developmental frameworks and governmental policies, evident in the City East Hampshire Council (East Hampshire District Local Plan Supplementary Planning Guidance, 2001). The city produces government circulars aimed at guiding planners and law enforcement on ways to create secure environments through design. Furthermore, property developers using safe by design principles can apply to use the 'Secure by Design' logo as part of their marketing strategy, to ensure clients the property meets safety needs. The application for the logo was available to them from an informative website (East Hampshire District Local Plan Supplementary Planning Guidance, 2001). This initiative encouraged developers to build according to set standards of safety and security, whilst also making properties marketable.

'Safe by Design' principles have also been included in the Local Development Framework for the City of Portsmouth. The city has various units in place tasked with addressing crime prevention through design (Local Development Framework – Portsmouth City Council, 2006). These included stakeholders from lighting, landscaping, CCTV management, community safety, planning policy division and the crime prevention sector. The framework encouraged planners to work with stakeholders on all developments in the city. In addition, the framework gave the City Council authority to impose certain planning conditions, such as lighting, CCTV installation or the creation of recreational spaces, if users of properties may be vulnerable or where design compromised community safety (Local Development Framework – Portsmouth City Council, 2006). Like the East Hampshire Council, the use of the framework allowed the government greater control over development across the city, to ensure planning and design incorporated crime prevention initiatives from the onset.

Santana *et al.* (2009) suggests that in Portugal increase in crime had especially affected urban areas. The government took an interdisciplinary approach to crime prevention, with recognition of incorporating crime prevention strategies into the planning and design processes. A specific study of the city of Amadora showed that crime was not randomly distributed, but concentrated in certain 'hotspot' areas. The study also found

that fifty four percent of respondents were fearful of crime, with respondents living in areas of socioeconomic deprivation having a higher perception of fear of crime (close to 61, 4%). The hotspots were established using surveys with a CPTED index. The index contained information on crime in urban areas where CPTED had been implemented which respondents had to rate. The index specifically:

Assessed features (e.g. lighting, vegetation, cleanliness, conservation, and other variables.) of public spaces (streets, squares, parks) and buildings (conservation, architectural aspects, and relationship with the public space).

Santana *et al.* (2009: 7).

The study showed that improving physical spaces (environmental and urban) enhanced the quality of life of people, because the perception of vulnerability decreases, while also lowering the potential for crime. Conversely, areas where there was a deterioration of the physical space hampered the quality of life and increased the potential for crime (Santana, *et al.*, 2009).

The defensible space and CPTED theories were developed and extensively applied in the US. This has resulted in extensive research and application of the model through various government initiatives. The concept of CPTED has been integrated into numerous development policies which guide and regulate its application. Over the years the US Department of Justice has commissioned studies, research and strategies for CPTED application (Hilborn, 2009; Cordner, 2010).

In addition, police stations and individual States have also created specific CPTED guidelines for implementation that are site and context specific. Some examples of these are the Oakland Police CPTED Security Handbook (n.d) and the City of Virginia Beach (2000). For example, the city of Kelowna, in Canada, used CPTED in single detached, multi residential and commercial properties (Guidelines for the City of Kelowna, 1999). Practitioners argued that solely using defensible space only served to close off spaces; thereby making the users of those spaces attractive targets. However, using the CPTED model implied the creation of user-friendly spaces, whilst warding off crime.

Similarly, New Zealand, published an Urban Design Protocol outlining guidelines for CPTED implementation in 2005 (New Zealand Ministry of Justice, 2005). The

guidelines suggested that local authority planners were responsible for carrying out CPTED. Moreover, it stipulated that:

It should also be read by police and those involved in crime prevention activity (such as local crime and safety managers, chairs and co-ordinators of Safer Community Trusts) and architects, urban designers, engineers, planners and building managers involved in planning, designing and managing publicly accessible places

(New Zealand Ministry of Justice, 2005: 2).

The publication had two parts; Part 1 explained seven ways of making spaces safer. Part 2 explained how safety was achievable using CPTED. The New Zealand Ministry of Justice acknowledged fear of crime, and actual crime as a reducible threat through quality planning and design. In addition, they included the CPTED principles in their national guidelines on planning and development, and crime prevention.

The Queensland government in Australia also created a guideline for CPTED implementation that drew on national frameworks for security and development. The government acknowledged that although CPTED was not new, the diversity of society and the various problems it faced, were. CPTED could address some problems that existed in multicultural and ethnically diverse metropolitan areas. The implementation was aimed at addressing, not just sustainable building design, but quality of life and safety as a whole. Given its versatility, CPTED was used to address the bigger problems of crime and accidental injury in public spaces, integration of the private-public realm and embracing the social and technological connections through time and space that influence the growth of towns and cities (Guidelines for Queensland, 2007).

Beyond the application of CPTED in research, it is important the model be incorporated into policies and strategies aimed at crime prevention, and planning and design. This will give effect not only to research but also to the application of it. In Singapore the National Crime Prevention Council (NCPC), released the CPTED guidebook in 2003 outlining in-depth and specific information and legislation on the theoretical underpinnings and implementation of CPTED in the major cities (NCPC, 2003). The design of the model was developed to suit the local crime climate and emergent development initiatives. The NCPC adapted CPTED principles to their local crime

issues, creating a planning and design index (a similar index to Santana *et al.*, 2009), based on Alice Coleman's (1985), called the 'design disadvantage index' or the three D's (Coleman, 1985). Designation (questioned what and how a CPTED project intended to do concerning existing infrastructure), Definition (questioned ownership and oversight of the project and its definition, legislation and policy backing), and Design (questioned how the implementation would take place using the CPTED principles). The NCPC emphasised the natural implementation of CPTED to enhance safety, backed by strong policy guidelines for local government and other stakeholders (NCPC, 2003).

Measures to 'Design against Crime' using CPTED are also being debated in crime prevention in South Korea. Park (2010) explains that the rapid increase in crime in the Seoul metropolitan area is attributed to industrialisation, urban migration, a transition to democracy and a breakdown in tradition. Park argues that early CPTED implementation was based on American guidelines and did not consider the culture and demographic composition of the country, resulting in projects failing. However, this initial attempt at using the model, created a paradigm shift for practitioners and policymakers, to recognise the significance of the model and to incorporate into initiatives in South Korea. It also allowed for cognisance of the fact that CPTED must address crime and be implemented in the context of local environments. Park (2010) illustrates that CPTED in South Korea is in its infancy and still developing. Even though there has been increased research since 2000 on crime the environment, the implementation and integration of CPTED into practice and development policies are still difficult. He cites a lack of understanding by practitioners and government, crime prevention being perceived as the problem of the police and political tensions in the creation and passing of legislation to enforce CPTED, as obstacles in implementation.

However, even with these challenges some principles have been implemented, such as improved street lighting and CCTV. Although increased lighting led to reduced crime levels, CCTV provoked community concerns, with residents outside areas with CCTV's fearing that crime would be displaced to their communities. Park (2010) states that the failure of CPTED initiatives should not be seen as negative, but an opportunity to learn. He suggests that successful use of CPTED depends on training for practitioners, community awareness, addressing fear of crime, and inter-agency partnerships. More

importantly, he recommends that Korea adopt the strategies of the UK, and other countries that have extensive knowledge of CPTED, and adapt them to the local environment.

Although the above case studies provide a brief overview of the application of CPTED, they do highlight key points:

- Europe
 - Use of government circulars to educate officials
 - Interdepartmental co-operation and partnership
 - Ward profiling of CPTED implementation by communities
- US
 - Integration of CPTED into all levels of government legislation
 - Specific creation of CPTED (police) station level local strategies
- Australia
 - Integration into national guidelines
 - CPTED used beyond crime prevention, in urban sustainability programmes
- Asia
 - Learning from and adapting international CPTED guidelines to local settings

The above cases illustrate strong leadership from urban planners and crime prevention practitioners in the implementation of CPTED. In addition, the countries have strong policy frameworks for the understanding and implementation of CPTED based on local crime levels. Lastly, governments played a supporting role in ensuring that frameworks and policies included CPTED, and provided capacity for its implementation. In contrast, in South Africa, the role of CPTED in planning and design is new and although its impact has been significant when implemented, the apartheid-planning legacy still poses an obstacle.

2.9 APARTHEID AND THE SOCIO-SPATIAL SOUTH AFRICAN LANDSCAPE

In 1948, the Nationalist Party, under the slogan of apartheid (translated 'separation'), was voted into power. The party had two missions, first the complete separation of races with supplies of a cheap, controlled black labour force and control over urban space (Ross, 1999). This regime of government was instrumental for half a decade of extreme apartheid, beginning with the Group Areas Act 1950. Enforcement of the Act had devastating effects on the socio-spatial landscape as thousands of black people were evicted and forcibly transferred to state-defined areas (Vermeulin, 2004), separated by buffer zones (Spinks, 2001). Even though blacks were restricted from owning land (Natives Land Act 1913), many still resided in privately owned reserves or areas close to urban centres, such as District Six and Sophia Town, out of government control (Joyce, 2007). Using the Group Areas Act, the government forcefully took over and removed blacks from their land, sometimes destroying whole communities.

Other examples of sanctions were restrictions on black movement, separate amenities, limited access to education and mixed marriages. Black communities had limited access to services, proper governmental management, social or economic development. In addition, blacks were forced to travel to already thriving white centres, for their daily goods, services or needs, because business and property development was restricted in black communities (Turok, 2001). Disproportionate distribution of wealth to white minority communities resulted in little economic investment in black townships for their growth or management, deepening marginalisation and decay.

The Group Areas Act restructured the city resulting in socio-spatial disparities and inequalities. Apartheid social engineering scarred the spatial structures of cities (Turok, 2001), with communities represented by, "*(1) ethnic heterogeneity; (2) socio-economic deprivation; (3) family disruption and (4) residential mobility*" (Breetzke, 2010: 1). Though South Africans experienced extreme violations of human rights, violence and crime under the regime of a separatist government these conditions created marginalisation and vulnerability, having lasting effects on crime and victimisation (Maharaj, 1997).

2.10 ANALYSIS OF CRIME IN SOUTH AFRICA

Crime has reached epidemic proportions in South Africa with annual increases in serious and violent crimes (Breetzke, 2008). During apartheid political crimes (related to the implementation of state security legislation) were more common than any other 'crime' (Pelser and de Kock, 2000). Subjective and inaccurate recording of statistics (Shaw and Camerer, 1996) captured most criminal activity as 'black crimes', portraying a distorted image of crime and victimisation (Kynoch, 2003). White suburbs had the highest levels of protection and security from police. Post-apartheid political stability and democracy, envisaged a decrease in crime, however, the opposite occurred. Countrywide statistics suggest that crime increased dramatically in the 1990s, with urban centres experiencing the highest crime rates with murder, theft of motor vehicle, assault, robbery, indecent assault, and rape the most commonly occurring crimes (Provincial crime statistics, www.crimestatssa.com).

Various social, economic and development factors are attributed to the increase in crime and victimisation (Liebermann *et al.*, 2000). Other influences include inequalities arising from apartheid, such as uneven distribution of service delivery, poverty and unemployment (Demombynes and Ozler, 2002). Whereas introducing crime victim surveys and the freedom to report crime (without political consequences), similarly increased statistics through reporting (de Haas, n.d). One common reason proposed for the increase of crime is the transition from apartheid to democracy is another reason.

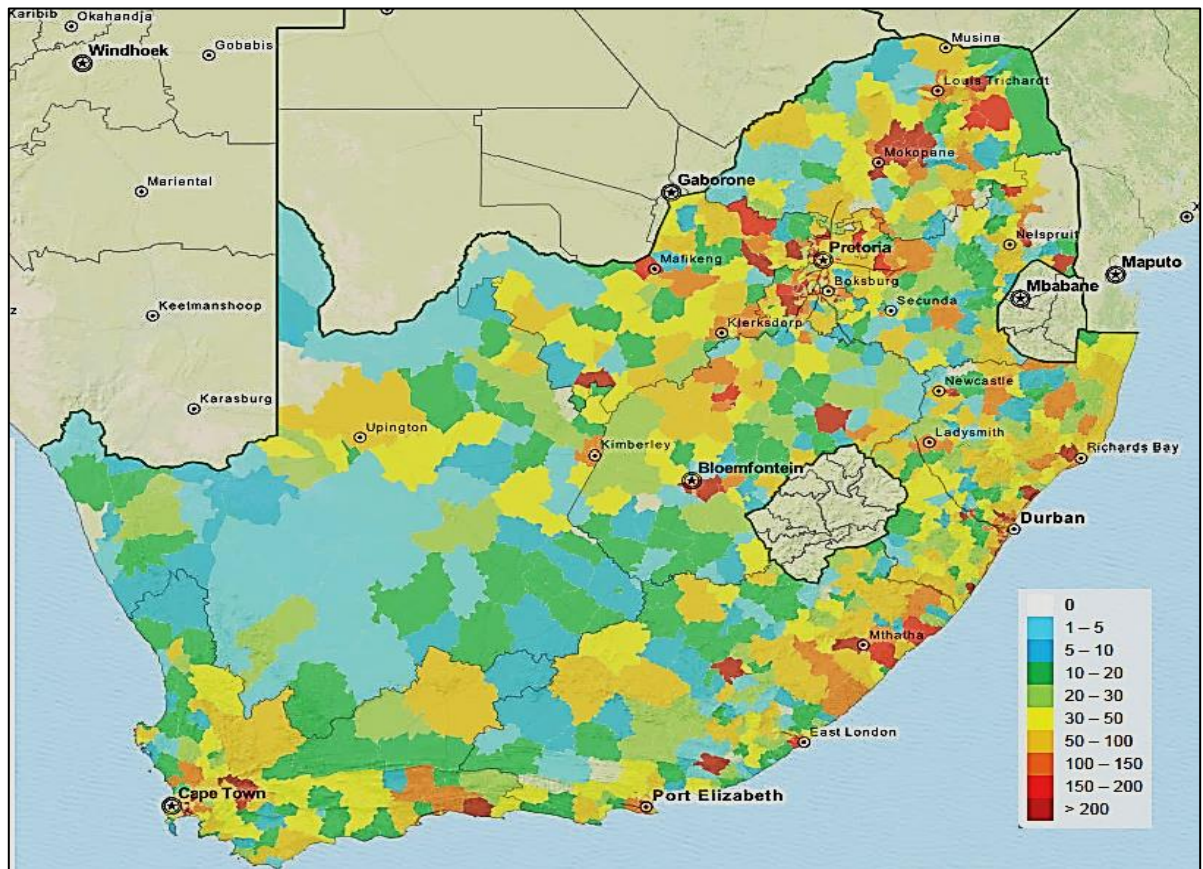
Ikejiaku (2009) explains this perception stating that crime increases during periods of political transition and instability. However, Breetzke (2008) rejects the notion that *only* transition influenced crime. He argues that observation of other countries, such as the Soviet Union and Latin America, suggests that transition is not a substantial cause of crime. Using the cases of El Salvador and Mozambique, he argues that both countries underwent civil war and transition, yet their crime rates are far less than SA. He reasons that in SA, the increase in crime in the post-1994 era may not have been because of the transition to democracy. Instead, he suggests that it was the socio-spatial disparities, as a result of apartheid policies, that were a causal factor of crime.

Although understanding the socio-economic causes of crime is significant, it is also important to examine the spatial causes and extent of crime. Criminal activity depends on the environments that block or stimulate crimes. Thus, CPTED initiatives include not just the implementation of its principles, but the use of geospatial maps to understand crime trends. For instance, the usefulness of crime mapping is illustrated by Figure 2.3 showing the extent of total contact crimes in SA. A spatial analysis reveals that crime tends to be centred in and around the urban areas.

Crime mapping allows the South African Police Service (SAPS) to link crime statistics with police station boundaries and explore the relationship between socio-economic variables using multivariate techniques (Breetzke, 2008). For example, Overall *et al.* (2008) uses spatial databases to map informal, urban, and peri-urban areas in Cato Manor, Durban. This initiative was undertaken to increase efficient response to crime by police officers, in what would otherwise be areas that have no specific identifying marks or names

The first forensic use of crime mapping involved a murder case in 1998 (Schmitz *et al.*, 2009). The technique assisted in identifying the communication and movement of suspects involved in a murder. Detectives engaged the CSIR to map the cellular communication and movements of the suspects through time and space. By use of the mapping process, they analysed conversations between the suspects, and triangulated their cellular signals from cell towers to determine the location of the suspects prior to, during and after the murder. Thereafter, a 3D map of the suspect's movements and locations was developed and presented during the trial with corroborating evidence from eyewitnesses. The conviction of the suspects was based on geospatial evidence.

Figure 2.3: Geospatial representation of Total Contact Crimes in South Africa in 2012



Source: Crimehub (www.iss.org).

2.11 POLICES ENDORSING CPTED IN SOUTH AFRICA

Various policies and strategies address crime and emphasise the need for a holistic approach to addressing the problem. The two strategies and two policies that give reference to the role of crime and its relationship to the environment are the National Crime Prevention Strategy (NCPS), the Safer Cities Strategy (SCS), the Integrated Development Plan (IDP), and the Urban Renewal Strategy (URS). These strategies and policies address crime, fear and prevention through national, provincial and local government, SAPS, community and stakeholder partnerships (Rauch, 2002a; Zambuko and Edwards, 2007).

2.11.1 The National Crime Prevention Strategy

The development of the NCPS was subsequently followed by the White Paper on Safety and Security (1998), renewed interest in crime prevention. The policy was the first attempt at creating a holistic, proactive, rather than reactive approach to crime prevention in SA (Shaw, 1998). Importantly, it was the first policy that acknowledged environmental approaches to preventing crime, by using and explaining the term CPTED (Masuka and Mapae, 2004).

The policy included four Pillars. Pillar one focused on the re-engineering of the criminal justice system, Pillar two explored situational crime prevention, Pillar three emphasised the role of community values and education, and Pillar four addressed transnational crime. CPTED falls under Pillar two and is the third tier of the approach (Naude, 2000) and is defined as:

Aimed at limiting environmental or situational opportunities for crime, and maximizing constraints by, primarily, ensuring that safety and crime prevention considerations were applied in planning new developments, and in the re-design and upgrading of existing infrastructure

(Rauch, 2002b: 12-13).

The NCPS served as the primary framework for CPTED and while ambitious, various problems exist with its implementation. According to Frank (2003), the NCPS lost the impact it aimed to accomplish. The failure of the policy was attributed to its inability to outline what the issues were and explain how the implementation should have occurred. As a result, CPTED, although enforced by the NCPS, was not fully implemented.

Although the policy outlines the underlining problems of crime and violence, it fails to stipulate how to address crime prevention through this model, or to legislatively recognise it in its policy directive (Bruce, 2006). First, the policy does not specifically outline what CPTED should entail. The NCPS outlined commercial crime and investigations, in the context of the model, instead of targeted urban design and planning (Naude, 2000). More importantly, national government provided little guidance to local government about those responsible for spearheading crime

prevention. Consequently, practitioners reverted to reactive prevention policies, contrary to the intentions of the NCPS (Moolman, 2000).

Although the NCPS calls for a holistic approach to addressing crime, the reactive criminal justice approach to crime prevention still prevails. A long-term approach like CPTED requires constant evaluation and monitoring, and is not easily implementable without proper oversight. Hence, short-term tougher responses to crime are commonly utilized (Berg and Shearing, 2011). This is evident in the minimum sentencing rulings and tougher policing tactics like the shoot to kill ideology and the reliance on broad based SCP and 'effective' policing models (Minnaar, 2010).

These alone cannot reduce crime (Liebermann *et al.*, 2000). Reinforcing these draconian measures are strategies such as the 2000 National Crime Combating Strategy aimed at supporting effective policing, and government's over-reliance on the idea that socio-economic problems motivates criminal behaviour. Contradictory to these approaches, crime and the number of incarcerated offenders have continued to increase, clearly indicating that deterrence through the criminal justice system is not working (Breetzke, 2008). On the other hand, a positive aspect of the National Crime Combating Strategy (2000) was that it emphasised the role of GIS. This is significant for CPTED implementation, as GIS formed the basis for tracking and understanding crime hotspots.

Thus, while the NCPS was limited Breetzke (2008) points to the fact that the policy paved the way for innovative and multidisciplinary crime prevention strategies (including CPTED). However, considering CPTED, the URS, IDP and SCS have been more successful in bridging the gap between policy and practice. The IDP developed for all nine provinces of SA, provides a holistic understanding of what CPTED is and how it can be utilised in the broader framework of social development and urban planning and design. The URS addresses urban regeneration through environmental design while also addressing crime through urban development. The SCS addresses the local implementation of CPTED guided by a specific crime prevention framework.

2.11.2 The Integrated Development Plan

The purpose of the IDP is to address the various social, economic and environmental concerns in SA. The IDP is produced annually with the publication of a final review every five years. The review assesses the successes and challenges faced by departments and organisations and helps in providing practitioners with innovative ways at addressing the issues faced by communities.

The IDP has an eight-point plan, with each broad plan consisting of various strategic focus areas. Each strategic focus area is comprised of programmes aimed at achieving the objectives and overall goals of the broader plan. The IDP also provides details of specific policies, strategies or approaches that can be applied for achieving the goals set out for each plan. Regarding CPTED, the literature focuses on Plan Three and Plan Four and reviews the 2011/2012 and 2012/2013 IDP's.

In the 2011/2012 annual review, CPTED is found under Plan Four, programme 4.1 and includes reactive strategies for addressing existing crime and proactive strategies aimed at multi-sectorial and multi-disciplinary prevention approaches. Crime is addressed in three ways namely (1) effective policing, (2) social crime prevention; and (3) environmental design for safer environments. Considering environmental design, the programme explores how design and maintenance of environments can reduce crime. Interestingly, Plan Four does not directly use the terminology CPTED, nor does it suggest the model as a strategy or an approach for reaching the objectives of programme 4.1 (IDP, 2011/2012). However, environmental crime prevention is explained in the context of CPTED and specifically recommends the use of design measures in disused, dilapidated buildings to ward off crime (IDP, 2011/2012).

In addition, a closer examination of Plan Four shows that programme 4.2 (similarly to programme 4.1) targets crime prevention in buildings by again emphasising the need to manage disused and dilapidated buildings to reduce its criminal potential. However, no reference is made to environmental crime prevention. (IDP, 2011/2012).

Although Plan Four discusses design and crime, further examination of the IDP also shows that CPTED indirectly influences Plan Three, programme 3.6 that focuses on

sustainable living spaces (IDP, 2011/2012). This programme looks at the development of spaces in a manner that increases the image and aesthetics to improve the quality of life. Secondly, it states that landscaping through design and planning is integral in the development of green spaces. Once again, Plan Three, programme 3.6 does not specifically refer to CPTED (IDP, 2011/2012).

In consideration of the critical analysis of CPTED presented in this dissertation, an assumption can be made that the objectives of Plan Four, programme 4.2 and Plan Three, programme 3.6 are achievable using CPTED. Perhaps, consideration of CPTED was not included in programme 3.6 because the model generally focuses on crime prevention instead of sustainability and development. However, the subsequent review of the next IDP (2012/2013) shows two significant changes in Plan Three and Four (Table 2.1) (IDP, 2012/2013).

First, CPTED was formally added as a strategy for achieving safety by means of planning, design and modifying the environment. Second, programme 3.6 (Sustainable public spaces) was removed and placed under Plan Six, which contains a multitude of programmes directed at embracing cultural diversity, arts and culture. Programme 3.6 focused on maintaining the sustainability of parks through planning and design. Certainly, sustaining public parks applies to quality living environments (Plan Three) and not Arts and Culture (Plan 6). If it is applicable, then its connection should be clearly delineated. In consideration of environmental design and management of public space, it would have been practical for programme 3.6 (now programme 6.24) to have remained under Plan Three. Also, if the developers of the IDP were forced to move the programme, it would have been advisable to have placed the programme under Plan One (which focuses on developing and sustaining our spatial, natural and built environment). In doing so, increased effect is given to sustaining public spaces through this Plan (or Plan Three) (IDP, 2011/2013).

Table 2.1: Changes in the Annual Reviews of the IDP between 2011/2012 and 2012/2013

Plan	Strategic Focus Area	Programme	Additions/Removals
IDP 2011/2012			
Plan 4: Fostering a Socially Equitable Environment	<ul style="list-style-type: none"> Promoting the Safety of Citizens 	<ul style="list-style-type: none"> Programme 4.1. Safe from Crime Programme 4.2 Safe Building Design 	<ul style="list-style-type: none"> CPTED not mentioned as a specific model to address crime or implement environmental design to reduce crime
Plan 3: Creating a Quality Living Environment	<ul style="list-style-type: none"> Address Community Service Backlogs 	<ul style="list-style-type: none"> Programme 3.6 Sustainable public spaces 	
IDP 2012/2013			
Plan 4: Fostering a Socially Equitable Environment	<ul style="list-style-type: none"> Remained the same as annual review 2011/2012 	<ul style="list-style-type: none"> Remained the same as annual review 2011/2012 	<ul style="list-style-type: none"> The formal addition of CPTED as a strategy/approach to create safe environments
Plan 3: Creating a Quality Living Environment	<ul style="list-style-type: none"> Remained the same as annual review 2011/2012 	<ul style="list-style-type: none"> Programme 3.6 'Sustainable public space' was removed from the Plan 3 	<ul style="list-style-type: none"> Programme 3.6 was moved under Plan Six (Embracing our cultural diversity, arts and heritage)

Source: IDP Annual Review 2011/2012 and 2012/2013.

The changes in the 2012/2013 review are significant for the implementation of CPTED. It positively indicates that policy makers are becoming increasingly aware of the contribution of the model toward sustainable planning and design, and crime (IDP, 2012/2013). The fact that the model is applicable to various programmes in the IDP (besides crime prevention) also demonstrates the holistic and versatile nature of the model, to go beyond crime and address basic service delivery through planning and design. However, the inability of policy makers to appreciate and make these connection, points to the limited exposure of the model and an understanding of its potential.

2.11.3 The Safer Cities Strategy

The Safer Cities Strategy (SCS) focuses on addressing crime and vulnerability in urban environments and serves as the implementation arm of the IDP. Using the strategy prevention is guided by a holistic incorporation of all crime prevention models, including CPTED (Safer Cities Project, 2003). It has a three-fold approach that combines effective policing, social crime prevention and environmental design (Shaw, 1998). Presently, CPTED principles are being used to influence public security in real and perceived terms (Zambuko and Edwards, 2007). How people view a place or space dramatically influences its use, CPTED creates quality living environments by decreasing crime and fear. Like CPTED, the SCS includes the role of architects and planners, local government and other stakeholders, and recognises the need for geospatial analysis and the use of crime mapping, to enhance crime prevention.

2.11.4 The Urban Renewal Strategy

The National Urban Renewal programme comprises two parts, The Integrated Sustainable Rural Development Strategy¹⁰ (ISRDS) and the Urban Renewal Strategy (URS). The URS draws on the NCPS, by including aspects of crime prevention and highlighting the importance of interagency cooperation and partnership (Rauch, 2002a). The URS targets urban areas, and while it does not include an entire spectrum of crime prevention initiatives, it does aim to increase urban safety. Like the SCS, it emphasises the role of design and planning in initiatives undertaken in the city and it supports the IDP.

The URS does not specifically mention CPTED but it achieves similar outcomes (National Urban Renewal Programme, 2002). The programme is primarily used to improve environments through urban regeneration. An unfortunate consequence of the programme was its initiation as a target specific pilot project carried out in five provinces spanning only eight areas¹¹. This included communities that were extremely

¹⁰ The IRDS specifically targets the development of rural communities

¹¹ The Urban Renewal Programme was also implemented in Khayelitsha and Mitchells Plain (Western Cape); Mdantsane and Motherwell (Eastern Cape); Alexandra Township (Gauteng); and Galeshewe (Northern Cape)

marginalised under conditions of apartheid. Implementing URS aimed at improving the environment through urban renewal, in the context of service delivery, and brings these locations on par with other 'better off' communities. In Kwa-Zulu, implementation took place in KwaMashu and Inanda.

Tosics (2009) is critical of the way implementation took place. He argues that earmarking only certain communities for the programme may imply that other communities are not disadvantaged or facing similar but not severe issues (Tosics, 2009). Though the programme has officially ended, it was successful in providing coordinated service delivery through urban regeneration at the eight locations. Implementing the URS across other communities is advisable because it focuses on changing the urban environment to improve quality of life and subsequently create safer communities. Seeing as the policy is similar to the outcomes achieved when using CPTED, it can be used as a tool for successfully implementing the model.

2.12 THE ROLE OF GOVERNMENT IN THE APPLICATION OF CPTED IN SOUTH AFRICA

As shown by the international overview of the application of CPTED, government, specifically local government, plays an integral role in implementing the model. In SA, the White Paper on Safety and Security 1998, clearly directs the task of addressing crime prevention to local government and makes provision for this level of government to ensure that development projects consider crime prevention principles (White Paper on Safety and Security, 1998). These objectives are supported by the White Paper on Local Government 1998, which promotes integrated spatial and socio-economic development and planning in addressing crime (Shaw, 1998).

As shown by the international cases, local government must be actively involved in the development and implementation of crime prevention programmes in response to local needs (Liebermann *et al.*, 2000). Not only are they guided by policy, but their work in communities provides them with an advantage of understanding local crime situations (Griggs, 2003). This allows them to allocate resources to target specific crime prevention strategies. Given the legislative mandate from government it is only fitting that CPTED be spearheaded through local government structures such as community

safety forums (Moolman, 2000; Griggs, 2003). Griggs (2003) contends that these structures include a host of stakeholders from local, provincial and national government. Hence, national and provincial crime prevention policies are easily transferable for local implementation.

According to Whitzman (2008), other local government structures (like ABM's)¹² can implement CPTED from a leadership, grassroots and professional coalition standpoint. In other words, they can take leadership of project implementation; engage with grassroots organisations and professional stakeholders. ABM projects are community specific, whilst also encouraging partnerships between government, civil society and community. Such initiatives also include support from both provincial and national governments, more so if they are targeting a priority area for crime and community safety. In addition, the outputs of ABM's are unique because they are action orientated and dynamic, with a multipronged approach. ABM's are guided by policies such as the IDP, SCS and URS and various other crime orientated and development policies that emphasis CPTED (Report On The National Area-Based Management Conference, 2006).

However, Tosics (2009) argues that area based approaches are not always positive. He reasons that such strategies only work in specific areas, while ignoring or being unable to operate in areas outside their jurisdiction. In doing so, it implies that other areas may not need intervention. Also, displacement of problems can occur from one community to the next. Last, a political encouragement for using area-based policies may be for their visibility and not effectiveness. Tosics proposes that overcoming these obstacles would include targeting specific responses when dealing with issues in each area. These include, increased community participation, sharing of resources and opportunities across all areas, as well as improved transport for poorer community members to access opportunities in other areas.

¹² Area Based Management is a form of localised micro governance of communities aimed at fast tracking service delivery while also implementing a broad spectrum of social, economic and environmental programmes. They are established in previously disadvantaged communities. The scope of their work applies only to the area in which they are located. Five ABM's exist in KZN, South Durban Basin (SDB) ABM; Phoenix, KwaMashu, Inanda (INK) ABM; Cato Manor ABM; City Centre (iTRUMP) ABM and Rural ABM. Rural ABM is not based in any one area but engages with various rural communities to address site-specific concerns.

Tosics's (2009) argument specifically relates to urban renewal programmes (like the URS); however it is relevant to CPTED, which indirectly targets urban renewal. His argument poses a question of assessing the reach and relevance of ABM's in SA. These structures only exist in Kwa-Zulu Natal (KZN), thus the responsibility of place-based/geospatial crime prevention approaches in other regions will fall under other local government departments.

Advocates of the model maintain that local government must continually advocate and develop strategies for the comprehensive implementation of CPTED (Moolman, 2000). There must be adoption of the CPTED model (through planning and design) across all municipal crime prevention strategies (Kruger *et al.*, 2006). Placed based approaches, like CPTED, are forward looking; in that there crime situations are foreseeable, and incorporated into the planning, design and management of spaces (Erdogan, 2010). The model is therefore feasible for reducing crime, fear and effectively increasing safety. Challenges to implementation of the model would be the ability to address crime in communities that are struggling to overcome the socio-spatial problems, stemming from disparities caused by apartheid. However, it is the responsibility of local government to play a strategic role in addressing these inequalities through innovative and sustainable service delivery.

Crime prevention programmes must be localised and this model can be easily tailored to address problems in specific environments (Shaw, 1998). Before using CPTED environments must be assess to determine the feasibility of using the model and whether its principles can be adapted to existing structures and environments (Sutton *et al.*, 2008). CPTED principles are not transferable from one environment to another as they are area specific. Rather its principles must be tailored to accommodate the specific geographical crime situation (Kruger *et al.*, 2006). In addition, Kruger (2005b) argues that various mechanisms are in place for CPTED implementation in SA. For instance, the CSIR, the leading research institute for CPTED, has published a number of guidelines for implementation in the South African context. This refers to three main parts: (i) a planning approach; (ii) managing an urban system; and (iii) specific detailed design initiatives (Kruger and Landman, 2003).

Kruger, (2005a) suggests a strategy for policy development and implementation by stating that broad national policies exist to guide crime prevention (including CPTED). However, carrying these out at a local level will have little to no effect in addressing crime. Thus, Provincial level government is responsible for drawing on national policy and ensuring that all stakeholders have a common approach and understanding of the model. At this level CPTED must be integrated with crime prevention and development strategies across the province. This tier of government should also identify the key role players across all levels of government for successful implementation, and ensure that local strategies are developed to address key issues.

In terms of local government he states that CPTED should be guided by a local CPTED strategy developed to respond to the specific context of crime issues. Implementation can be small to medium, or on a large scale, depending on the requirements of the target area. However, he cautions that CPTED will not be implementable if proper oversight and guidance does not exist, especially if the mechanisms for implementation are based on administrative or political requirements from superiors in the municipal structure (Kruger, 2005a). Despite the fact that there are projects using CPTED, the literature reviews four cases that precisely represent the diverse application of the model.

In KZN, the city of Durban has undertaken various CPTED initiatives in partnership with ABM's and various local government departments. For example, collaboration between the Metro Police Unit and SAPS resulted in the establishment of an inner city CCTV network system monitored by municipal police. This was supplemented by improved lighting and the development of aesthetically pleasing green routes around the city to increase safety around public routes. CPTED implementation also included an expansive regeneration of the Warwick Junction area. The area covers a large portion of the CBD and comprises of informal and formal traders, taxi ranks and bus terminals. The urban renewal project included the provision of new infrastructure for traders, revamped streets, increased lighting and sanitation. Not only did the provisions improve quality of life for traders and commuters, but also reduced crime (Zambuko and Edwards, 2007). Similar projects in Durban include the Cato Manor Development project which used CPTED to plan, design and develop housing projects that were aesthetically pleasing and promoted safety.

Environmental design approaches were also evident in the 2010 Clermont KwaDebeka regeneration project, where aspects of CPTED such as territoriality, image and aesthetic principles were used (Claremont KwaDabeka Township Regeneration Projection, 2010). The project examined existing structures and aimed to manage and recreate spaces (where possible) to improve the quality of life. The project proposed, that green spaces and mixed land uses would promote aesthetics and make spaces inclusive for all users. Again, using CPTED achieved positive outcomes for improving the urban environment.

Although KZN's strategies included actual implementation, other cities have focused their efforts in creating policy to guide broader crime prevention beyond CPTED. For instance, the Department of Transport, Roads and Community Safety in collaboration with the CSIR developed a CPTED strategy for the North West Province. This strategy examined the multidisciplinary role of CPTED and the interdisciplinary role of the stakeholders who should be involved in its implementation (Kruger *et al.*, 2006).

The crosscutting role of government departments and stakeholders was also emphasised in the Nelson Mandela Bay Metropolitan Municipality. Local government sought to create an integrated crime reduction strategy that aimed at bringing together government departments and stakeholders to address various socio-economic problems and to promote development. The Municipality aimed to develop a strategy that consisted of short and long-term responses to crime. The strategy began by ascertaining the various socio-economic problems, local crime situation and perceptions and community awareness of crime and fear. The Municipality strategy outlining eight key approaches, three of which included environmental design initiatives, namely:

- (3) Prevent crime through the deployment of Community Based Volunteers at crime hotspots;
- (5) Supplement visible policing efforts with technological aids such as CCTV;
- and (8) Co-ordinate, provide and enhance targeted crime prevention through environmental design projects

(Masuku and Maepa, 2003: 63-67).

Similar to the North West Province and Nelson Mandela Bay Municipality, the city of Gauteng's CPTED strategy to address crime through design, was carried out in two phases. The first phase highlighted the various causes of crime and challenges in

addressing it. This included apartheid planning and design issues as a key concern, and lack of communication between departments and stakeholders, as well as socio-economic problems. The second phase made practical recommendations on interventions for addressing these concerns (Kruger, 2005b). A key outcome of the strategy was the role of various government units, such as the Departments of Housing, City Planning and Environmental Design that were highlighted as being responsible for implementing CPTED.

The city of Cape Town has also adopted a unique way of addressing crime through urban planning and design. In 2006 the city initiated the Violence Prevention Urban Upgrading Project, in Khayelitsha. Although the primary focus of the project was to decrease crime, it also aimed to improve urban environments and social standards and introduce sustainable community projects to empower people. The project drew on situational, social and institutional crime prevention strategies. A key aspect of this project was that it highlighted the use of a 'maintenance and management' (pride and ownership) principle to ensure the sustainability of the project (Violence Prevention Urban Upgrading Project, www.capetown.gov.za). Interestingly, the project was a renewal/regeneration initiative, yet, used all the principles of CPTED for achieving quality living environments and reducing crime.

The case studies above indicate the growing awareness of CPTED. Although it is not as advanced as international developments, it does indicate a shift in policy development and practice, especially where local government is concerned. KZN has used the model, but closer examination reveals that implementation has been through urban renewal and service delivery initiatives. This suggests limited application of the model to targeted crime prevention. The case studies reveal the successes and challenges of using the model, in doing so, a key suggestion is highlighted. This being, that government needs to draw on national and provincial policies and develop local CPTED strategies to address specific concerns. A good example of this is the seven point plan used by New Zealand (New Zealand Ministry of Justice, 2005).

2.13 RESTRUCTURING THE SOCIO-SPATIAL LANDSCAPE IN SOUTH AFRICA USING CPTED

Evidently, planning and design is central to addressing deep-rooted remnants of apartheid engineering through spatial integration. Post-apartheid planning and design was intended to address the inequalities of the past through integration and desegregation. An examination of gated communities¹³, the most profound urban developments after apartheid provides conflicting views on planning, design and security. Gated communities separate areas from the surrounding environment and restrict access to some zones in the urban fabric. They are primarily located in metropolitan and coastal areas (Kruger and Landman, 2003). As discussed previously in this chapter, crime tends to be higher in urban areas (Muggah, 2012), thus, resulting in the presence of these developments around such environments.

Coetzer (2000) studied the use of defensible space through planning and design of a Centurion business complex in Gauteng. Newman (1996) developed the theory for use in private residential and not public spaces. Even so, Coetzer argues that defensible space (which forms part of CPTED) is applicable because the complex was a private space developed for public use. The significance of the development was the consideration of aesthetics and security needs of the environment. This required a compromise between planners and security services. The study highlights the fact that CPTED can create inclusive spaces if the security of spaces does not compromise positive image and aesthetics. Overtly protected sites do not add to the aesthetics, while lack of protection leads to spaces becoming breeding grounds for incivilities. The partnership between planners and security personnel in the implementation of CPTED is vital to ensuring that balance exists.

Conversely, Lemanski (2006) studied one gated community (Silvertree), and one Improvement District (Muizenberg) (ID). ID's are areas that apply to government to be closed-off under the notion that controlled access and management of that area is aimed at upgrading and improving conditions. She found that residents of the gated

¹³ Gated communities/security villages are luxury estates built to enhance safety and quality of life. Enclosed/enclaved communities refer to the closing-off of communities, using boom gates/security personnel to control movement. This can be done legally by application or in some instances illegally.

community made an economic decision to reside there because of fear of crime and insecurity. On the contrary, residents of the ID purposely set out to first, close off the community based on upgrading the area to increase house prices and quality of life, while disassociating themselves from both crime and fear of it.

Besides business complexes, Coetzer (2003) also studied safety through CPTED in three new-gated communities in Gauteng, located in Garsfontein, at the Woodlands Lifestyle Estate, the Glossa Estate and the Prairie Estate. Developers used principles of CPTED to create security through aesthetic appeal and Poyner's (1983) guidelines: (a) homogeneous; (b) single-family housing; (c) limited access and (d) separation from commercial areas, for safeguarding residents into the development. Considering SA, and the task of integration and desegregation, Poyner's (1983) criterion poses a problem when considering design initiatives to address crime in post-apartheid communities. Many disadvantaged black communities are heterogeneous, with extended families, located on the periphery of cities and industrial areas. The use of CPTED in gated communities cannot be justifiably generalised to heterogeneously diverse communities. Second, if CPTED were implemented using these guidelines, then it would only apply to gated communities or new developments.

Gated communities, privatisation of and the fortifying of space, appear positive for its users because it decreases fear, increases community cohesion, service delivery is privatised and environments are managed in such a way that they improve the quality of life, yet, it accomplishes this at the cost of the other CPTED principles (Kruger and Landman, 2003). These developments negatively affect the structure of cities by undermining residential desegregation and integration. They create fragmentation, breakdown in social cohesion and increase perceptions of fear for those outside the communities (Landman and Schonteich, 2002), or who are unable to access these places. In addition, the developments may decrease crime. However, the reality is that crime is displaced (often to poor communities) instead of being eradicated. Privatised spaces also create problems of urban governance, as gated communities are beyond government management.

The above cases highlight that gated communities have replaced apartheid-developed townships, as new spatial symbols of desegregation and residential segregation.

Donaldson (2001) states the gaps between townships, city and suburbs are widening, creating less opportunity for desegregation and shared sense of space. This, he argues opposes development policies that encourage integration. His line of reasoning applies to Breetzke's (2008) astute examination of residential polarisation when considering disparities:

The spatial organisation of cities and the creation of gated communities are expressions of social as well as political violence. They work towards the disintegration of public spaces enhancing social division and segregation (Agostoni *et al.*, 2006).

For example, in SA white communities have transformed into gated communities, in an attempt to uphold the 'white lifestyle of the past'. Ironically, the movement of middle-class blacks from the 'unsafe townships' to these white areas has interrupted this preservation (Breetzke, 2008). However, middle class Blacks are also residing in gated communities. Hence, instead of race, the basis for socio-spatial segregation is class and fear of crime.

The development of gated communities provides insights into the conundrum of how the spatial development of SA cities can increase safety, but only for the wealthy. For instance, the knowledge of integration of CPTED in development tends to be most prominent amongst planners and consultants developing projects for the wealthy (CSIR and ISS, 1997). This may be based on the fact that more funding exists for re-designing and planning environments; however, it poses a dilemma for the majority of South Africans living in poor conditions. In support of this, Schronen (2003) highlights the role of planners in the development of residential low-cost housing. Town planners tend to locate these developments far from the city, in isolated environments, which often results in residents living in criminally susceptible milieus.

If safety improves the quality of life, reduces fear and increases social cohesion, then the question that remains is whether re-designing and planning apartheid environments can uplift disadvantaged and once impoverished communities (Lemanski, 2004; 2006). In SA, the task for practitioners would be translating the principles of development from gated communities to the broader context of post-apartheid neighbourhoods.

Incidentally, this will be based on increased knowledge and awareness of models like CPTED.

Rebuilding the post-apartheid city will not be easy, but working on the existing structures may prove possible. Restructuring the urban form and spatial character of SA, requires adjusting CPTED to fit the fragmented nature of the apartheid city and government policies (Kruger, 2005). Ideally, the incorporation of CPTED in gated communities is easier while having the greatest effect on reducing certain crimes. Considering these developments and crime, if Poyner's (1983) criteria for safeguarding communities are used to assess the feasibility of CPTED, then its application in communities affected by apartheid will not be easily accomplished. In light of these arguments, a key concern is whether:

Planners, architects and others who make decisions about how we manage our built environment (are) partly responsible for the rise in crime?

(Poyner, 1983:1).

Similarly, Eloff and Prinsloo (2009: 26) question if:

Urban design and planning practitioners (should) address these issues as part of their responsibility and play their roles effectively to reduce crime and make cities safer places.

Nevertheless, all communities have the opportunity to manage environments to maximise safety and improve quality of life (Liebermann *et al.*, 2000) and this does not exclude communities, outside gated communities (Coetzer 2003; Lemanski 2004). CPTED is implementable in all communities in some way or form with positive and negative outcomes. However, as indicated by Park (2010), in his study of CPTED implementation in South Korea, negative outcomes should not be viewed as dejected. It is an opportunity for planners and all other stakeholders to learn from, develop and implement improved strategies to increase quality of life and safety.

2.14 CONCLUSION

This chapter contextualised the conceptual and theoretical framework applied to the study, by discussing how crime has been integrated into the discipline of geography

(and vice versa). The evolution of crime theorisation resulted in the development of environmental criminology and thus environmental approaches to crime prevention. Central to this was the CPTED model. An analysis of the model, its international application and studies of crime, fear and place shows that using the five principles of CPTED can successfully reduce crime and create quality living environments. Since the model is based on an environmental approach to crime prevention, it is innately linked to geospatial crime mapping. This spatial analysis influences both the implementation of CPTED and validates arguments that the environment does influence criminal activity.

Crime is a global concern and its causes vary from country to country. The majority of crime (internationally and locally) is concentrated around urban centres. It affects the most marginalised groups, particularly those found close to cities. These communities tend to live in poor environmental conditions, thus creating greater vulnerability. A common goal to addressing these security concerns has been manipulating the environment using CPTED or similar initiatives.

The international overview of the application of CPTED shows that Europe, North and South America and Australia have extensive knowledge and experience in using the model. They have well developed and specific CPTED policies that are supported by government. Conversely, Asia and South Africa are still coming to grips to understanding and implementing the model. Even though some countries are experiencing more success than others, challenges still exist in implementing CPTED. These include lack of support from government, the model not being fully integrated with development policies, partial awareness by planners and limited monitoring and maintenance after implementation. A key contention of this chapter is that government, specifically planners are central to implementing CPTED.

The role of planners also emerged as a key issue when examining the impact of apartheid on the socio-spatial landscape. An examination of gated communities showed that the full extent of CPTED is being used primarily for the elite. However, the majority of the urban poor are located in crime prone areas, characterised by apartheid planning and design. The chapter proposes that the task for planners and other practitioners is to determine how CPTED can be implemented in the post-apartheid

context of disadvantaged communities, and still achieve the positive impacts of improved quality of life and safety.

CHAPTER THREE: METHODOLOGY

3.1 INTRODUCTION

This chapter explains the methodology adopted in this study. The methodology of a study refers to the systematic guidelines used when carrying out research. The chapter is divided into ten sections. The first two sections (3.2 and 3.3) outline a summarisation of the research questions and the intent of the study. This is followed by the last seven sections (3.4 to 3.10) that present detailed explanations of the research methods and design, used by the researcher to achieve the aims and objectives of the study. The limitations and ethical considerations are also discussed.

3.2 AIMS AND OBJECTIVES OF THE RESEARCH:

The aim of this study is to determine whether planning and design can assist crime prevention in the SA, with specific reference to a case study of the community of Wentworth, Durban, Kwa-Zulu Natal. The study area is spatially located in the South Durban Basin (SDB) region.

This study examined the nature and extent of crime, and planning and design problems. The problems were geospatially mapped to determine whether crime occurred in areas with planning and design problems. The study also questioned whether apartheid planning and design affected existing planning, design and crime problems. The study further explored whether the CPTED principles could fit into the existing social and physical structure of the community. Finally, it assessed the viability of the CPTED model to reduce crime and the role of government in partnership with communities, in the implementation of the model.

3.3 RESEARCH QUESTIONS

3.3.1 Primary research questions

Can the implementation of the CPTED model increase community safety in Wentworth by reducing crime, vulnerability and fear?

3.3.2 Secondary research question

- i) Does apartheid planning and design influence existing problems with crime and the built environment?
- ii) What is the nature and extent of crime and fear (of crime) in the community?
- iii) What is the nature and extent of planning and design problems in the community?
- iv) Are crime hotspots more prevalent in areas experiencing planning and design problems?
- v) Can the principles of CPTED be implemented in the Wentworth community?
- vi) What is the role of government in the implementation of CPTED?

3.4 CASE STUDY RESEARCH DESIGN

The research design highlights the process of linking data to the research question, drawing conclusions and recommendations for the benefit the study and further research (Yin, 1993). Case study design helps the researcher test theories, while also building on existing theory (de Vaas, 2001).

Case study design implies adopting a qualitative exploratory (particular phenomenon are explored to reveal patterns), descriptive or explanatory design (the formation and testing of theory/theories) (Clark and Creswell, 2008). The researcher analyses many levels of patterned data to explain a particular phenomenon and reveal information to test theories (Zainal, 2007). The data can be collected intrinsically (only the case itself is studied), instrumentally (a small group/set of units are studied) or collectively (many data sources studied). Multi-layered case studies are complex because each case is individually explored and compared (Yin, 1993; Clark and Creswell, 2008).

Alternatively, single case studies are less intricate, and allow the researcher to collect in-depth, rich data.

Case studies are generally used when findings cannot be replicated or when specific issues are studied (Zainal, 2007). Since the design aims to achieve internal and not external validity, they are critiqued for their inability to generalise findings from one study across others. Yet, Maree (2007) argues that the general applicability of the findings from a case should not be a problem because as a 'case study' it aims to study (a) specific problem(s) and make recommendations, rather than generalise findings. In addition, Yin (1993) argues that scholars tend to measure survey research against the generalisation of qualitative case study research. However, the applicability of statistical generalisation to qualitative case study design is possible if correct samples are selected for survey research. In doing so, external validity is achieved through theory testing and generalisation of findings from one case study to the next (Neale *et al.*, 2006).

Other ways of overcoming problems of applicability and generalisation are achieved using a mixed method (Clark and Creswell, 2008). This way, many sources and techniques of data are collected and analysed (Neale *et al.*, 2006). For example, a qualitative case study design can incorporate quantitative methodologies. Data can be quantified and its numerical values used to identify particular cases for investigation, or specific aspects that can be qualitatively investigated.

Considering the above arguments, the researcher used an explanatory design to test the CPTED (Crime Prevention through Environmental Design) model. This involved the use of a single case study of the Wentworth community, using multiple sources of data and a mixed methods methodology.

3.5 MIXED METHODS METHODOLOGY

Besides the strictly single qualitative or quantitative approach, the mixed methods approach is becoming popular among researchers and includes using both quantitative (numeric) and qualitative (narrative) data (Caracelli and Greene, 1993; Johnson *et al.*, 2007). A true reflection of the mixed methods approach represents each method according to its delineations and yields balanced and validated findings. Two examples

shape the delineations of the approach and determine whether the study is more qualitative or quantitative. First, a QUAN + qual approach is used when a large amount of the study is based on quantitative data and supplemented by qualitative data. Second, is the QUAL + quan approach, used when qualitative data, supplemented by quantitative data (Driscoll *et al.*, 2007). This is evident in the data collection method of this study, which used the QUAN + qual approach. The large quantitative data sample provided internal and external validity. It also allowed for the quantitative part of the study to be generalised across other studies.

However, the balance between each method, (qualitative and quantitative), is not always clearly demarcated (Bazeley, 2002; Johnson *et al.*, 2007). Also, weighting each method to create balances is difficult and is not always clear (Gerring, 2007). For instance, in this study the researcher thematically analysed the data. Hence, quantitative and qualitative data overlap. Using the mixed methodology allowed the researcher to attain varying viewpoints and external and internal validity, attributable to integrating many methods (Johnson *et al.*, 2007).

3.6 SAMPLING

Traditional case study design uses qualitative methods and sampling. However, using mixed methodologies requires both qualitative and quantitative sampling techniques. Angell and Townsend (2011: 30) refer to this as *"multilevel mixed methods sampling, when probability and non-probability sampling is used during the different levels of data collection and analysis"*. Both sampling techniques can form part of a mixed methodology. However, purposive sampling is critiqued when used in case study research. Clark and Creswell (2008) argue that it does not represent the total population. The sampling may not provide transferability because participants are chosen to represent a particular interest (Maree, 2007). So, generalising the results to the total population can be unrepresentative, with limited external validity. Alternatively, this can be overcome by using a second method, such as probability sampling. This way the researcher gains access to a diverse group of people thus providing external validity and the ability to generalise the findings to other studies.

For this study, the researcher used cluster (probability or quantitative) sampling techniques for the dissemination of questionnaires. This technique is useful when the population, like the Wentworth community, is dispersed and inaccessible, or spread over large geographical areas (Clark and Creswell, 2008). It also provides external validity because large units are measured, is convenient and cost effective (Maree, 2007). In contrast, purposive sampling (non-probability or qualitative) techniques were used to select interviewees; based on the value they added to the study (Teddlie and Yu, 2007).

3.7 MIXED METHODS DATA COLLECTION

With a mixed methodology, data can be collected concurrently (qualitative and quantitative data is collected at the same time) or sequentially (one set of data is collected before the other). However, this can result in long and time-consuming data collection. For this study, the researcher used sequential data collection. This strategy is advantageous because equal priority was given to each set of data. Also, one set of data can inform the collection and analysis of the next (Cameron, 2009). For instance, while the data collection for the study was time consuming, collecting the quantitative data first, allowed the researcher to modify questions for the qualitative interviews and focus group sessions.

The study used two phases to gather and analyse data. During phase one; quantitative data was compiled consisting of (i) the dissemination of questionnaires, (ii) the creation of a map and (iii) photographic evidence. In the second phase, qualitative data collection, consisted of (iv) interviews and (v) focus group sessions.

3.8 DATA COLLECTION INSTRUMENTS

Sutton *et al.* (2008) contend that practitioners should consider four stages of CPTED implementation. Stage one requires working with stakeholders and communities to identify problems, through community surveys/interviews. Community members outline crime prone, degraded or unsafe areas. In stage two a site analysis is carried out, enabling practitioners to assess the area based on community responses (from stage one). At stage three, the practitioner, in collaboration with local government and all

other relevant stakeholders, recommends how CPTED can be implemented in the specific environment. During stage four, the model is implemented, in partnership with government, community members and all other stakeholders. Alice Coleman proposed a similar process in 1985, called the 'design disadvantage index' (Coleman, 1985). Using the index, design problems in the physical environment could be assessed and rectified to reduce crime and antisocial behaviour. Similarly, Zahm (2007) also proposed a problem solving process, called SARA (Scanning, Analysis, Response and Assessment), applicable to CPTED as a problem-solving tool.

Considering the above guidelines, the researcher approached the SDB Area Based Management (ABM) offices and requested permission to be a part of the South Durban Basin (SDB) Community Safety Forum (CSF). This allowed the researcher to understand local government crime prevention initiatives, and to also gain access to the community. This was a mutually beneficial study as this study addressed a gap in strategies pertaining to crime prevention through environmental design, in the SDB. Being a member of the SDB CSF also provided insight to how data collection and analysis could influence this study and broader practical initiatives.

The data collection instruments of this study followed the steps outlined by Sutton *et al.* (2008). First, community questionnaires were compiled to provide insight to the various crimes and planning and design problems. Second, a map of the area was created to illustrate the spatial relationship between crime and planning and design problems. Third, site visits of areas experiencing high incidences of these problems were photographed. Fourth, interviews with selected government officials and community activists were conducted. Last, focus group sessions (minutes of the SDB CSF pertaining to CPTED initiatives) were also used. The focus group and interviews helped the researcher to understand the role of government in crime prevention.

3.8.1 Questionnaires

Using cluster (probability) sampling, questionnaires¹⁴ were used to gather quantitative community-based data. The Merewent area accommodates fifty percent of the total

¹⁴ See Appendices Two for a copy of the Questionnaire.

population of the SDB (Kruger, 2006), for the study one thousand respondents were surveyed, which comprised of 3.3% of the total population (N=30000). Using a large sample ensured a wide spectrum of the population was represented and provided a diversity of respondents from across a large geographical area. Beyond presenting the findings in reality, it was important to ensure diversity because it assists in reinforcing the external validity of the data and the analysis. From a practical level, the large sample provided a broad foundation for supporting implementation of CPTED under the SDB CSF, in the study area and surrounding communities. Questionnaires were also inexpensive and allowed large groups of people to be surveyed. Self-administered questionnaires allowed respondents to individually complete the forms, with the researcher present to address any queries.

Access to the community was gained through churches. Each church had between two hundred and one thousand members. The SDB ABM office, besides establishing the SDB CSF, also created the SDB Faith Based Organisation (FBO). The researcher's decision to access the community via the churches was because there were over fifty churches in Wentworth (SDB ABM, FBO Database, 2012). Furthermore, both the SDB CSF and SDB FBO have worked in partnership when undertaking projects within the community. So, the researcher's relationship with members of the SDB FBO committee allowed access to the congregations. Another reason for using churches was due the extensive work that many of the organisations undertook with regard to social and community development. For instance, Pastor Victor Smith of Miracle Ministries indicated that his church engaged in a number of support programmes. Some of these included visiting the local hospital and providing support for the sick (those with HIV/AIDS and other illnesses) that have been ostracised from the community. The church provided a monthly allowance for widows, care for the elderly through the provision of toiletries and other necessities, and educational bursaries for orphaned children (Smith, Electronic Communication, 2013).

Using the SDB ABM database the researcher initially selected ten churches spread geographically across the community (SDB ABM, FBO Database, 2012). In this way, a diverse population could be surveyed from across a wide geographical area. The initial objective was to carry out one hundred questionnaires in each of the ten churches. The researcher contacted the church leaders, explained the purpose of the study and

requested access. Seven churches declined and three (Austerville Congregational Church, Grace Tabernacle Church and Miracle Ministries)¹⁵ agreed to allow the congregation to participate in this study.

The questionnaires had to be approved by the Pastor(s), to ensure it did not contain any inflammatory material. Thereafter, the researcher arranged a date and time-slot at the end of the Sunday service to address and disseminate questionnaires to the congregation. Respondents were asked to fill in and return questionnaires the following week to their Pastors at the next Sunday service. This failed to achieve the desired results as many questionnaires were not returned, resulting in time-consuming and cost related losses. To overcome this problem, the SDB ABM provided the researcher with five-hundred pens, so respondents could fill and return questionnaires at the end of each church visit. The SDB ABM also assisted by printing additional questionnaires.

To compensate for the unreturned questionnaires, the researcher sought the assistance of two fieldworkers who had daily contact with community members. One fieldworker worked at a local high school (Fairvale Secondary School)¹⁶ and was a member of the Wentworth volunteer social crime prevention programme. Consent to administer the questionnaires at the school were gained through the principal. Questionnaires were completed by parents and returned to the school. The second fieldworker worked in the NGO organisation, Khulisa, and administered questionnaires through her daily engagement with community members. Transportation was a challenge as questionnaires had to be delivered to, and collected from, the field workers. In addition, work commitments made it difficult for fieldworkers to adhere to the timelines when returning completed questionnaires.

The questionnaires were divided into four broad categories of various questions pertaining to (i) demographics, (ii) crime, (iii) crime and design and (iv) CPTED. There were open-ended (the respondents provided reasons for specific choices) and close-ended (predefined options) questions. One thousand questionnaires were administered. The Khulisa fieldworker administered one hundred and fifty questionnaires and the

¹⁵ See Appendices Three for copies of consent forms outlining the participation of the churches in this study.

¹⁶ See Appendices Four for a copy of the consent form outlining the participation of the school in this study.

fieldworker at the school, one-hundred. Seven-hundred and fifty questionnaires were administered to the churches by the researcher. Of these questionnaires one hundred and twenty three were not returned. Two hundred and twenty five were returned incomplete and unusable. This left a combined total of six-hundred and fifty-two questionnaires for analysis. A reason for incomplete questionnaires could be attributed to the structure of the questions that grouped many choices under particular questions. This structure may have been confusing for respondents. In some instances, respondents answered half the questionnaire; these were not captured to ensure the integrity of the results.

3.8.2 Geospatial representation of crime and planning and design problems

A map of the area was created using questionnaire responses. The respondents provided the names of roads and areas, which were (i) crime hotspots or exhibited (ii) planning and design problems. Each data set was compared to illustrate whether crime was occurring in areas experiencing planning and design problems. The maps (Figure 4.13 and Figure 4.14) assisted in providing an objective reasoning for implementing CPTED because it was created from community responses. It assisted in determining whether planning and design influenced crime and whether the use of CPTED was feasible or not.

3.8.3 Photographic evidence

Visual evidence served to emphasise details from the map (Figure 4.13 and Figure 4.14). The photographs represent the areas with the highest planning and design problems, which influence crime levels.

3.8.4 Interviews

Interviews¹⁷ formed part of the second phase of the data collection process, and the researcher used a qualitative approach, guided by the quantitative phase of the study (Maree, 2007). Fossey *et al.* (2002) argue that qualitative data does not require a large sample, as interviewees are purposefully selected for their specific knowledge. Thus,

¹⁷ See Appendices Five for a copy of the Interview Schedule.

small samples are just as effective for providing rich data. Nonetheless, the researcher needs to be careful to ensure that participants are appropriately chosen to add value to the research.

Interviews allowed the researcher to gain in-depth data about the subject, and provided insight on conflicting responses that emerged from questionnaires (Harrell and Bradley, 2009). Three officials and one community activist were interviewed. Two participants were from the eThekweni Municipality SDB ABM offices, one from eThekweni Municipality Safer Cities and one community activist. The interviews contained semi-structured questions, which focused on the role of government, knowledge and use of CPTED, and general questions on planning, design and crime in the study site. In addition, questions were informed by the expertise of the participant.

Time and interview scheduling was a challenge. A twenty minute time limit was allocated for interviews, also one had to accommodate the work commitments of interviewees. The time limit was considered sufficient, because interviewees were selected to provide specific information. However, interviewees took between thirty and forty minutes owing to the diverse data that emerged and participant's enthusiasm and knowledge. In addition, the busy schedules of the interviewees with many being government officials, created challenges to confirm interview sessions. The SDB ABM helped the researcher by enabling access to their boardroom for conducting interviews.

3.8.5 Focus groups

Focus group sessions refer to discussions aimed at collecting deeper and richer range of data (Harrell and Bradley, 2009). The sessions bring together people to discuss concerns centred on specific themes. Each person in the group builds on the responses of others. These sessions allow for open and inhibited discussions with alternative and diverse perspectives.

Focus groups are helpful when participants are selected to add value to the discussions, especially in cases that require expertise. Many sessions need to be held and the broader population needs to be represented. However, bringing all participants together at a specific time and place is a challenge. Other challenges included the participants'

reluctance to discuss sensitive topics and domineering personalities in the group (Harrell and Bradley, 2009). The researcher needs to control the flow of the discussion, ensure that participants do not get side-tracked, and make sure that no participants dominate the discussion.

Over a one year period, 2011-2012, the researcher attended the monthly SDB CSF Meetings that were taken as focus group sessions. The committee consisted of over thirty members that included government (provincial and local) officials and stakeholders from NGO's, business, and community. The proceedings of the meetings were useful because the committee focused on and discussed crime prevention and CPTED. An added advantage was that the experts, from the various crime prevention sectors, were also part of the SDB CSF.

3.9 INFORMED CONSENT

Various ethical concerns are attached to research. First, the researcher must gain the voluntary consent of the participant and respondents to use data gathered from the study (Nnebue, 2010). Second, consent is based on the ability of participant and respondents to read and understand the consent form, and voluntarily participate in the study (Sankar, 2004). Similarly, for the study, the researcher (and fieldworkers) asked each participant to sign a consent form. Questionnaire respondents were only asked to sign and date forms, without divulging any personal details.

Each consent form outlined the aim and objective of the research, the researcher's details, risks and benefits, the freedom of the participant to withdraw at any stage and confidentiality. Also, Lawson and Adamson (1995) state that the language used on consent forms should be simple with understandable phrases and words, and scientific terms must be clearly explained. The forms should consider the educational status of the participants, have a high school level readability and consider regional differences in language. For this study, the researcher (and fieldworkers) informed the respondents and participants of their role and the purpose of the research. Respondents were assured of total confidentiality and anonymity, as outlined on the form.

The data reflect age groups 12 to 16; these respondents are considered minors. This posed an ethical concern as minors generally require parental consent for participation in the study. Fieldworker, Melinda Pillay, worked with respondents over 18 years of age, thus her questionnaires (n=150/15%) did not encounter any ethical issues. Respondents under 18 who filled out questionnaires at churches did so with parental and guardian consent (n=750/75%). However, at school students between Grade 8 to 12 completed questionnaires without parental consent (n=100/10%).

Most school based studies, which include students, or teachers attain consent from all or either of the school administration, principal, parents and the Department of Education. This consent is likewise based on the nature and extent of the particular case. Generally parents are asked to give consent for children under 18 to participate in any study; however, this may not always be the case. Spriggs (2010) argues that children may not necessarily need to have parental consent if the minor is mature enough to understand the nature of the research and if the research is beneficial with little risk. He further states that parental consent is there to ensure additional protection but there are circumstances when such consent is (i) inappropriate (e.g. evaluation of abused or neglected children) or (ii) offers no protection (names and addresses or contact details may need to be provided in research that is anonymous).

Strode *et al.* (2010) states that South African Law indicates that minors do not possess the capability to act independently. However, legislators have recognised that minors are capable of participating in research without parental consent if they have the maturity and capability. For example, children over 14 can consent to medical treatment, with parental consent only required for persons under that age. Yet, Strode *et al.* (2010) contends that even this age limit may change to allow children from the age of 12 to make decisions to attain medical treatment.

In addition, Mason-Jones *et al.* (2011) states that 14 year olds may be just as competent as adults to provide consent and appreciate their participation. Strode and Slack (2011: 71) contend that:

Where proxy consent is necessary for research, consent from persons with no parental responsibilities and rights but who provide day-to-day care of children,

namely caregivers, ought to be permissible where the research approximates minimal risk (and other requirements are met).

Therefore, consent can be obtained (for minors the participation of minors in research) from those who provide day-to-day protection and maintenance of a child. Attaining parental consent does not undermine such authority, but promotes shared decision-making in research participation (Mason-Jones *et al.*, 2011).

The above guidelines apply to this study, because parental consent for disseminating questionnaires in schools was not an ethical transgression. In addition, consent was provided by the principal of the school in question. The questionnaires used for this study, did not contain any inflammatory material that would have harmed or put the students at risk. Likewise, the principal did not believe that this study would harm the students in any way, and found it beneficial to them understanding crime within the community, especially since crime and violence also filtered into schools.

Moreover, the study was supported by the local government office (SDB ABM) and safety forum (SDB CSF) and formed part of a broader examination of crime within Wentworth and surrounding communities¹⁸. The researchers approach can be critiqued with arguments that minors do not understand crime and its effects. However, the study explored the application of the CPTED model to the physical and built environment to reduce crime and vulnerability. It did not intend to offer an elaborate sensitive exploration of victimisation, which would have required parental consent.

Interestingly, the researcher found that the participation of minors in the study was advantageous to understanding crime in the community as youth are more likely to spend time outdoors. Also, the Wentworth community experiences high levels of crime to which students are exposed. Many students have experienced bouts of violence within and outside of schools due to student-on-student, and teenage gang violence. In some instances this violence has led to the deaths of young adults from the community (Chetty, 2005; Abrahams and Andrew, 2006). Furthermore, only ten percent of the

¹⁸ See Appendices Six for a copy of the consent form outlining the participation of the researcher as a member of the SDB CSF, intern at the SDB ABM offices and permission for access to use of documents and data.

aggregate questionnaires were completed by students. Evaluation of completed questionnaires also revealed that the majority of incomplete questionnaires originated from respondents over 25 years old. This demonstrates that respondents between 12 and 18 years old understood crime in the community and appreciated the objectives and aims of the study.

3.10 CONCLUSION

This chapter provided a background to the study area by examining the nature and extent of crime and the various, socio-economic conditions that would inform implementation of CPTED.

The chapter also detailed the method and design of the study that allowed the researcher to collect multiple data sources. Not only did the various data sources provide validity and generalisation as a research method, but the analysis of the large quantitative (questionnaire) sample determined the applicability of CPTED in the community.

The qualitative focus group and interviews provided an understanding of CPTED from a practical perspective. However, the quantitative component of the work was central to this study because it revealed the thoughts and experiences of community members. The questionnaires focused on crime and planning and design, and provided insight into the problems (and assessed whether CPTED is needed by, and for) the community. In addition, the map (created from questionnaire responses); along with photographic evidence from site visits provided external objectivity for validating the implementation of CPTED.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1 INTRODUCTION

This chapter provides an in-depth analysis of the data collected. This study aimed to assess if crime hotspots were more prevalent in areas experiencing planning and design problems. If so, the subsequent assessment examined whether the CPTED model could be used to modify the environment to reduce vulnerability. Since the model is based on the notion of crime prevention, data was collected to reflect the nature and extent of victimisation within the community.

The chapter is divided into six sections. The first section (4.2) outlines the process of analysis. The consecutive sections centre on four themes. Section 4.3 discusses the demographic composition of respondents, and section 4.4 the nature and extent of crime and victimisation. Section 4.5 examines the relationship between planning, design and crime, while 4.6 explores the practicality and feasibility of using CPTED within the study area. Lastly, section 4.7 provides a summary of the main findings and concludes the chapter.

4.2 THE PROCESS OF ANALYSIS

The data was electronically captured and analysed using Microsoft Excel software. The results are presented in various graphs (figures) and tables. Data is also illustrated and analysed from maps and photographic evidence.

4.2.1 Quantitative

i) Questionnaires

Using the Likert scale (a psychometric scale used in questionnaires to test a range of collective responses), questions were structured to allow respondents to answer either 'Yes' or 'No' to varying sets of questions. The questionnaire was structured to assess and gain insight into the community's knowledge on the nature and extent of crime and

victimisation. It further aimed to assess whether the community understood how planning and design influenced crime; and if they supported the use of CPTED. Although respondents had to answer all questions, questionnaires were returned with missing responses. In these cases, the lack of response was coded as NR (no response). The questionnaire responses were captured according to gender. In cases where no gender (or age) was provided the data was captured as NoDem (no demographics).

ii) Map and Pictures illustrating crime and planning and design hotspots

Using Google Earth (GIS maps), a map was developed from responses about planning and design problems and crime hotspots. The map spatially reflected the relationship between these two problems. Similarly, from the same responses, certain roads or places/areas were photographed. These pictures were used to visually emphasise problems in the physical environment. They also supplemented analysis of the CPTED principles in crime prevention.

4.2.2 Qualitative

i) Interviews

Interviews were conducted with three officials, and one activist working within the field of crime prevention and community development. The researcher noted that residents of Wentworth were not knowledgeable about the policy directive on factors influencing the use of CPTED. Therefore, the interviews supplemented the responses from the questionnaires, by providing an alternative insight into the use of the model by local government. Interviews were held with:

- i) Anitha Govender (Social Development Coordinator, SDB ABM)
- ii) Clint Leverton (SDB CSF member and secretary to the SDDN)
- iii) Eurakha Singh (Manager Development Division, SDB ABM)
- iv) Kamini Pillaye (Facilitator, Department of Safer Cities)

ii) Focus groups

SDB CSF meetings were selected as focus group sessions. The SDB CSF specifically addresses crime prevention. The committee was formed as a mandate from the MEC for Transport, Safety and Security under the Department of Community Safety and Liaison. Given, this mandate, the SDB CSF is tasked with addressing crime in line with provincial policy and legislation.

4.2.3 CPTED PRINCIPLES

Chapter Two discussed how the principles of CPTED, although distinct, overlap and are interrelated. For the analysis, Principle 2 - Image and aesthetics was overlapped with Principle 3 – Access and Escape routes, whilst Principle 1 – Target hardening was overlapped with Principle 4 – surveillance and visibility. Principle 5 – Territoriality is a common thread across all other principles. To illustrate the viability of implementing CPTED, Table 4.8 and 4.9, includes a comparison of the questionnaire responses to its related principle/s. This way the various planning and design problems, outlined by residents of Wentworth, are linked with the corresponding principle/s of the model.

4.3 DEMOGRAPHIC COMPOSITION OF RESPONDENTS

Analysing demographics according to sex is important in crime-related research. This cross-sectional analysis assists practitioners in understanding how race and age affect crime and victimisation across different sexes, and determines the intervention needed (Bezeidenhout and Joubert, 2003). For instance, by virtue of gender, females are more likely to become victims of violent crimes and sexual assault than males (Bezeidenhout and Joubert, 2003).

Conversely, the age of individuals determines how vulnerable they are to either engaging in or being affected by crime. In this regard, the fragility of the elderly puts them at risk of crime both within and outside the home, while the activities that young people engage in make them vulnerable to contact crimes (Newburn, 2007).

The sample group comprised of more Coloured (65.0%) and Black (17.0%) respondents, with White and Indian counterparts making up an aggregate of only 4.0%. The racial composition of the community, coupled with the socio-economic environment¹⁹ may make them vulnerable to increased victimisation. Race and ethnicity also play a role in determining groups who may become or are victims. Bezeidenhout and Joubert (2003) state that globally Black people are more likely to be victimised than any other race group. In SA, Blacks make up seventy-five percent of the population, yet eighty percent of violent crimes are perpetrated against them. Bezeidenhout and Joubert (2003) suggest that the reason for such elevated crime against this race group is because of the social-spatial environments in which they are situated.

Table 4.1: Demographics of Wentworth showing race and age by sex

	Male (n=275)	Female (n=333)	Total (n=652)
Age			
12 to 19	44.7	48.9	43.9
20 to 29	18.9	20.1	18.3
30 to 39	7.6	9.6	8.1
40 to 49	7.3	9.6	8.0
50 to 59	3.3	7.5	5.2
60+	1.1	2.1	1.5
NR	17.1	2.1	15.0
Race			
Coloured	65.8	72.7	65.0
Black	16.0	20.7	17.0
Indian	2.5	3.9	3.0
White	0.7	1.2	1.0
NR	14.9	1.5	14.0

4.4 THE NATURE AND EXTENT OF CRIME AND VICTIMISATION IN WENTWORTH

4.4.1 Feelings of safety in the community and at specific times

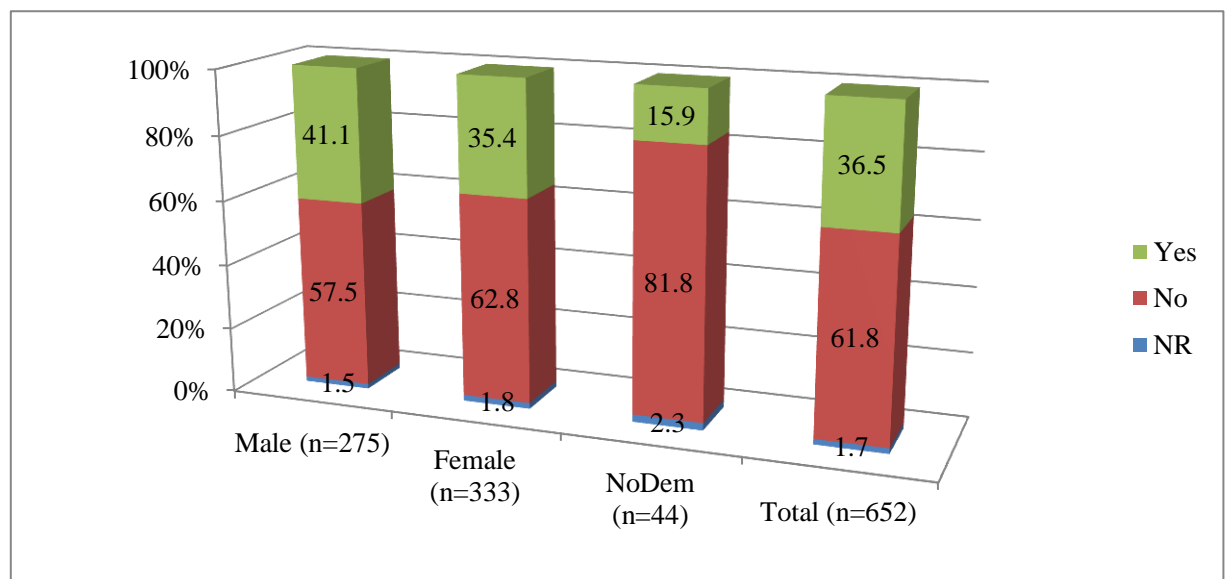
Respondents were asked to indicate whether a set of crime types were prevalent or made them fearful of victimisation (Table 4.3 and 4.4). These categories of crime were

¹⁹ Discussed in Chapter Three: Methodology. 3.4. Crime Typology of Wentworth.

adapted from the provincial and local crime statistics. The same categorisation of crime was used to assess the nature and extent of victimisation (Table 4.2).

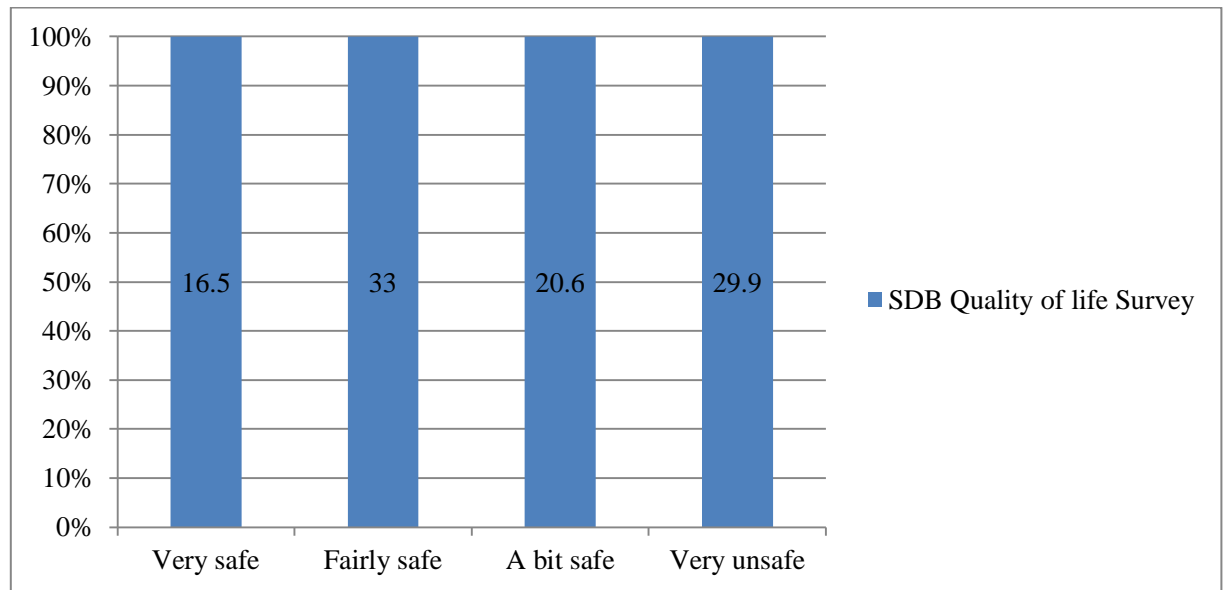
The study found that 61.8% of respondents did not feel safe in the community. When analysed according to gender, both males (57.5%) and females (62.8%) felt unsafe with a difference of 5.3% across both sexes (Figure 4.1). These findings are similar to a socio-economic survey of the community (Figure 4.2) that revealed increased feelings of vulnerability in the Merewent area, which included Wentworth (UrbanEcon, 2006).

Figure 4.1: Feelings of safety in Wentworth



Furthermore, the study found that feelings of safety differed according to time and gender. Aggregate results for feelings of safety during particular times reveal that respondents felt equally unsafe (71.9%) at night (Figure 4.3) but safer during the daytime (Figure 4.4). However, while both sexes felt safe during the day, more females felt unsafe (76.3%) at night.

Figure 4.2: Feelings of safety within the greater South Durban Area (includes Wentworth)



Source: Adapted from UrbanEcon (2006).

The findings of the study are consistent with international studies, showing that residents experienced escalated feelings of fear at night (Lemanski, 2004; Perry *et al.*, 2006; Cornder, 2010; Austin *et al.*, 2002). Also, it is normal for women and other vulnerable groups (such as the aged) to be more fearful, as they run the risk of being victimised more than men (Austin *et al.*, 2002). The demographic composition of the community may also influence feelings of safety (Figure 4.1). Lemanski (2004), states that Coloureds and Blacks experience a greater sense of vulnerability at night as opposed to Whites. Presenting victimisation statistics, Lemanski (2004) argues that ninety-five percent of Whites felt safer during the day in their homes compared to just over fifty percent of Blacks and Coloureds. At night, fear becomes more pronounced for all race groups. However, fifty-one percent of Whites feel safer in their residential areas at night, compared with only nine percent of Coloureds and twelve percent of Blacks.

Figure 4.3: Feelings of safety at night in Wentworth

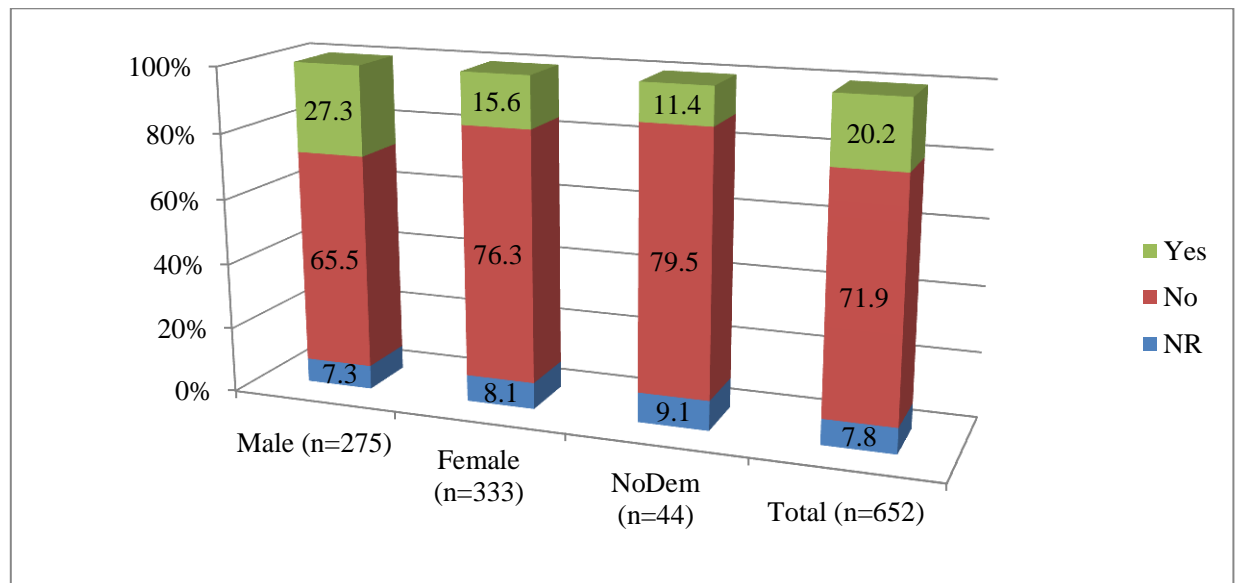
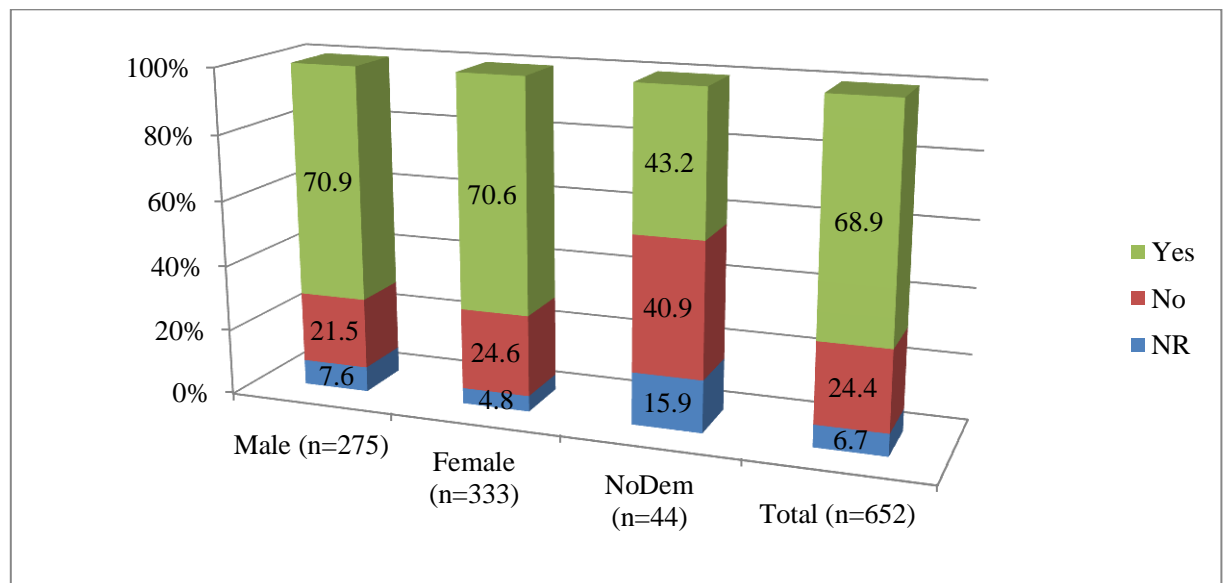


Figure 4.4: Feelings of safety during the day in Wentworth



The racial differences between the feelings of fear are inherently linked to the environment. As a result of apartheid social and spatial engineering, Black and Coloured communities were confined to areas that did little to enhance and promote safety and quality of life (Lemanski, 2004). Crime, occurs when there are attractive targets, poor environmental conditions and lack of maintenance. These conditions generally present themselves at night, thus creating increased fear. Perry *et al.* (2006) explain that people feel vulnerable at night because areas become deserted, increasing fear of crime and victimisation. Also, changing activities during certain times of the day

or night are also ascribed to fear (Loukaitou-Sideris *et al*, 2000). At night, activity decreases making one feel that fewer people are watching over or protecting them. This provides the opposite reaction for offenders who are more active at night, because of this lack of guardianship and detection.

4.4.2. Influence of crime on social development and interaction

If crime depends on space and time, then understanding feelings of safety would provide insight into social interaction and overall community development. Development policies, like the IDP (2012/2013), encourage social investment within communities. This means bringing residents together to participate in activities within residential areas. Not only should people take advantage of the opportunities that exist, but they should also create opportunities for themselves. This is only possible through social interaction amongst residents.

Research has shown that increased social ties can influence a decrease in neighborhood crime and vice versa (Kubrin and Weitzer, 2003). Therefore, high incidences of crime and violence can potentially reduce social interaction among residents. In line with this, this study found that crime (Figure 4.5) negatively impacted both community involvement (76.8%) and (Figure 4.6) social relationships (69.2%). Nevertheless, when analysed according to gender, more females felt social relationships and community development were affected by crime.

Moore (1990) argues that crime affects the social ties of females because they tend to be more active in social relationships (with teachers, neighbours, parents of other children) within the community. Also, factors like marriage, children and unemployment results in women spending time in the home and creating connections with neighbours. Other reasons may be that females are more aware of crime and its impact. Intensive prevention programmes target disadvantaged communities, which are most affected by crime. In such communities poor unemployed women tend to be actively involved in such programmes (Frank, 2006). These statements may explain the responses by females (Figures 4.5 and Figures 4.6). Wentworth is composed of more females than males, many of whom are unemployed housewives. Thus, they have closer social ties and relationships within the community, which may be affected by crime.

Social ties among neighbors provide the groundwork for the potential to produce informal social control. With regard to CPTED, this means establishing community ownership over spaces in which residents live and use. CPTED aims to directly increase territoriality through community participation in crime prevention. In this way, the creation of defensible spaces (using the various principles of the model) increases territoriality and in turn, social investment.

Figure 4.5: Effect of crime on community involvement in Wentworth

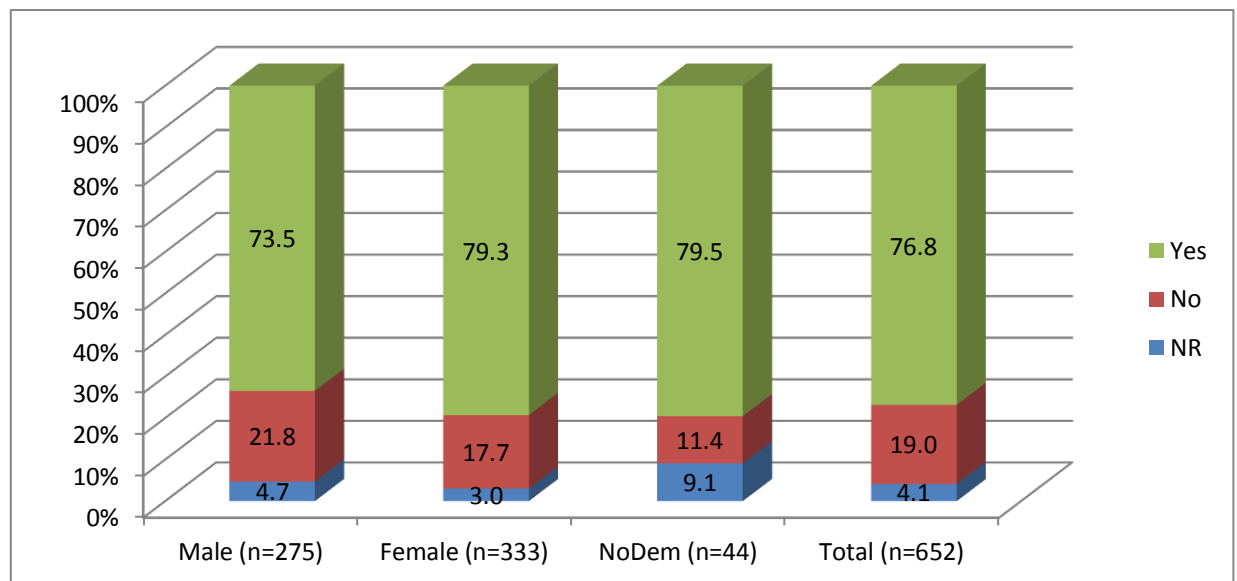
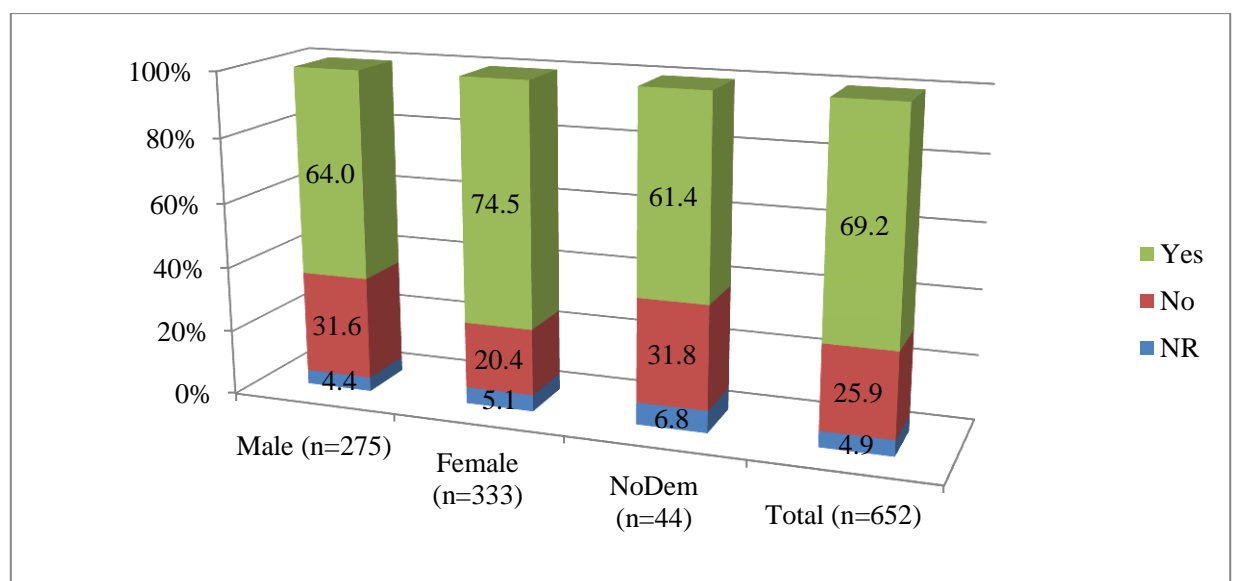


Figure 4.6: Effect of crime on social relationships in Wentworth

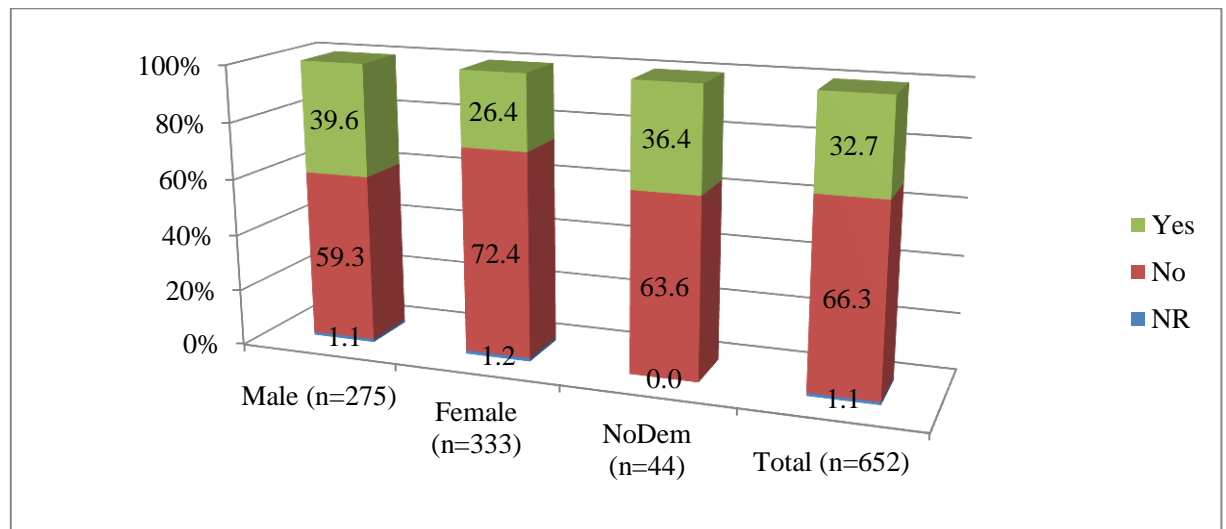


4.4.3 Nature and extent of crime and victimisation

Gender determines the nature and extent of crime experienced by males and females. Men stand a greater chance of becoming victims of crime, particularly assault, robbery and murder. Conversely, women are most likely to become victims of petty and sexually motivated crimes (Davis and Snyman, 2005). This study found (Figure 4.7) that a higher proportion of males (39.6%) were victimised compared to females (26.4%).

The results from Figure 4.7 are similar to gendered responses that emerged in a Quality of Life Survey (2009/2010) carried out in Durban. Similarly, this study found that males and females experience victimisation differently. Twenty percent of men were victims compared to fourteen percent of women (Household survey, 2009-2010).

Figure 4.7: Extent of victimisation in Wentworth



Females are most likely to be victims of sexually motivated crimes committed by known individuals, mainly other males, within the home environment. Conversely, males are victims of violence, such as physically aggressive crime, outside the home (Morash, 2005). Understanding the nature and extent of victimisation in relation to gender, guides practitioners on the development of policies that address both crime and victimisation, with specific reference to gendered issues (Davies *et al.*, 2007).

Table 4.2 outlines the nature of victimisation as indicated by respondents. The researcher analysed each crime type by gender, and found males experienced a greater extent of victimisation than females. The nature of these crimes differed according to gender. Only males experienced attempted hijacking (1.1%). However, while both males and females experienced actual hijackings, more males (6.8%) were victims than females (2.8%).

Both males and females were victims of house break-ins at some point. Nonetheless, females experienced greater victimisation (15.7%). This could be attributed to the number of female-headed households within the community (SDCEA, 2008/2009). It could also indicate responses from unemployed housewives.

Third, both males and females had been indirect victims of murder/loss of life²⁰, while only males had been victims of attempted murder (1.1%).

Regarding physical violence, females experienced more incidences of abuse (0.9%) and assault (7.5% including assault with a weapon). Conversely, males experienced more assault than females (14.8%). Males were also victims of violence as a result of gangsterism (8.0%), physical abuse and shootings (1.1% equally).

Robbery emerged as the most frequently occurring patterns of victimisation for both genders. This is not surprising given that the demographics of Wentworth indicate a young population. Youth are most likely to become victims of interpersonal and contact crime such as robbery, assault, theft (Newburn, 2007).

In terms of sexual assault, this study found that few males experienced attempted or actual rape (1.1% equally), while more females were victims of rape (6.5%) and sexual harassment (0.9%). While males can be raped, it happens less frequently than female rape. Yet, in both instances, it is most likely to be perpetrated by other males.

²⁰ Loss of life refers to any injury or accident resulting in the death of one or many individuals. Murder is a result of the direct intent of someone to kill another individual.

Table 4.2: Nature of victimisation according to gender in Wentworth²¹

Crime Type	Male (nr=73/170)		Female (n=84/170)		NoDem (n=13/170)		Total (n=170)	
	n	%	n	%	n	%	n	%
Hijacking								
Attempted Hijacking	1	1.1					1	0.5
Car Breaking	3	3.4					2	1
Hijacking	6	6.8	5	4.6	3	17.6	14	7
Theft of Car	2	2.3	3	2.8	1	5.9	6	3
House Break-in's								
Burglary	3	3.4	4	3.7			7	3
House Break-in's	4	4.5	17	15.7	3	17.6	25	12
Theft of Household Items	4	4.5	5	4.6	1	5.9	8	4
Murder/Loss of Life								
Attempted murder	1	1.1					1	0.5
Murder	3	3.4	1	0.9			4	2
Physical Injury								
Abuse			1	0.9			1	0.5
Assault	13	14.8	6	5.6			18	9
Assault with weapon			2	1.9			2	1
Domestic violence			2	1.9			2	1
Gangsterism	7	8.0					7	3
Physical Abuse	1	1.1					1	0.5
School Violence							3	1
Shootings	1	1.1					1	0.5
Victimisation			1	0.9			1	0.5
Violence	2	2.3	4	3.7	1	5.9	8	4
Robbery								
Armed Robbery					1	5.9	1	0.5
Robbery	27	30.7	31	28.7	5	29.4	63	30
Theft	3	3.4	10	9.3	1	5.9	10	5
Sexual Violence								
Attempted Rape	1	1.1					1	0.5
Rape	1	1.1	7	6.5			7	3
Sexual Harassment			1	0.9			1	0.5
Other								
Harassment			5	4.7			5	2.9
Intimidation	2	2.3	1	0.9			3	1
Kidnapping	1	1.1			1	5.9	2	1
Substance Abuse			1	0.9			1	0.5
Vandalism			1	0.9			1	0.5

²¹ Respondents provided any number of responses (See Footnote 3 for further explanation of categorisation).

Lastly, 'other crimes' referred to victimisation that could not be categorised under any crime types represented in Table 4.2. Harassment was experienced by females (4.7%) and not males. Conversely, males experienced more intimidation (2.3%) than females. Interestingly, females cited substance abuse as a form of victimisation against them. This could refer to domestic abuse or (sexual) assault, as a consequence of substance abuse by a spouse/partner.

In keeping with international and local statistics, the study found a higher ratio of male to female (Table 4.2 and Figure 4.7) victimisation (Burton, 2006). The reason for this discrepancy may be, that males, when faced with strain, react differently than females. Most females perceive themselves as naturally vulnerable by virtue of their sex, thus making them soft targets (Davis and Snyman, 2005). On the other hand, males react to hostility with anger and violence, which results in hostile reactions (Hall *et al.*, 2009). This may explain why Table 4.2 shows males experiencing victimisation related to physical aggression such as gangsterism, physical assault, hijacking and intimidation (2.3%).

While this study shows a lower ratio of female victims, it is still noteworthy to assess why the victimisation may exist. The presence of unemployed and female-headed households may indicate that women are at a socio-economic disadvantage within the community. This makes them vulnerable to crime, by virtue of being alone during certain times of the day. They may also be regarded as vulnerable due to the lack of a male(s) within the home. Unemployment may also result in females engaging in risky activity (such as prostitution). Prostitution is widespread within the SDB area (Geyede, 2013) with men encouraging their wives to engage in sexual activity for monetary gain (Chetty, 2004). Engaging in such activities make women vulnerable.

The nature and extent of victimisation experienced by males may be as a result of violence associated with gang activity, such as intimidation or harassment. This is evident from one male respondent citing lack of social cohesion as a form of victimisation explaining that, "*people from one side of the area against others from the other side of the area*" (Male Questionnaire respondent, 2012).

Addressing victimisation is important for community safety and development. Davis and Snyman (2005) suggest that beyond community interventions and education, reconstructions of the built environment can be used for the prevention of victimisation. High incidences of crime occur most frequently in residential areas, slums or areas with overcrowding. Reducing crime would entail changing the socio-economic environment and the reconstruction and/or development of such areas. They especially suggest the use of street lighting and CCTV surveillance, measures which are in line with CPTED.

4.4.4. Prevalence of crime vs. fear of crime

Crime prevention policies and strategies must consider both actual and perceived crime rates. This study aimed to assess the extent of the fear (perceptions), and prevalence (actual) of crime by residents of Wentworth. A list of seven broad categories of crime was provided, and respondents were asked to indicate which crimes were most prevalent and those that they feared.

Table 4.3 shows that the fear of crime was higher than its perceived prevalence. Sequentially, the most prevalent crimes were (i) robbery, (ii) house break-ins, (iii) physical injury and (iv) murder ranging between fifty-one and fifty-seven percent of respondents (Table 4.3). This was followed by (v) loss of life, (vi) hijacking and (vii) sexual violence ranging between forty and forty-seven percent of respondents. A cursory analysis of Table 4.3 indicates that the various crime types are prevalent and feared. However, a comparative analysis of fear and prevalence reveals significant dissimilarities.

Table 4.3 revealed that females had heightened feelings of fear, with an average increase of 12.1%, for each crime type. The general assumption is that women tend to be more fearful of crime than men. However, women may be more fearful than men because they are exposed to harassment and threatening behaviour in their daily lives (Lupton and Tulloch, 1999). Similarly, this study found that some females cited harassment as a form of victimisation (Table 4.2), for example, *"old men look at you funny when you walk past"*; *"boys calling out names at girls"* and *"as a girl you can't walk outside, they whistle for you when you walk past"* (Female Questionnaire respondents, 2012). These responses indicate that females are more vulnerable to various forms of victimisation and are thus, more fearful of crime.

Table 4.3 Crimes that are most prevalent and cause fear in Wentworth

Crime Type (n= 652)	Prevalent				Fear			
	Male (n=275)	Female (n=333)	NoDem (n=44)	Total (n=652)	Male (n=275)	Female (n=333)	NoDem (n=44)	Total (n=652)
Hijacking								
Yes	41.5	36.9	50.0	39.7	52.0	56.2	38.6	53.2
No	24.0	19.5	6.8	20.6	17.1	8.4	2.3	11.7
NR	34.5	43.5	43.2	39.7	30.9	35.4	59.1	35.1
House break-ins								
Yes	56.4 54.1		63.6	55.7	53.1	68.2	40.9	60.0
No	13.8	11.4	2.3	11.8	15.3	4.2	6.8	9.0
NR	29.8	34.5	34.1	32.5	31.6	27.6	52.3	31.0
Loss of Life								
Yes	47.6	43.8	63.6	46.8	61.8	67.3	43.2	63.3
No	17.8	10.2	0.0	12.7	11.6	3.6	4.5	7.1
NR	34.5	45.9	36.4	40.5	26.5	29.1	52.3	29.6
Murder								
Yes	52.0	46.8	63.6	50.2	54.5	67.0	54.5	60.9
No	16.7	11.1	2.3	12.9	20.4	3.6	0.0	10.4
NR	31.3	42.0	34.1	37.0	25.1	29.4	45.5	28.7
Robbery								
Yes	61.1	52.6	56.8	56.4	60.4	63.1	47.7	60.9
No	6.5	6.6	2.3	6.3	10.5	5.4	2.3	7.4
NR	32.4	40.8	40.9	37.3	29.1	31.5	50.0	31.7
Sexual Violence								
Yes	38.5	36.0	52.0	38.2	51.6	67.0	38.6	58.6
No	23.3	18.0	7.0	19.5	16.0	3.9	2.3	8.9
NR	38.2	45.9	41.0	42.3	32.4	29.1	59.1	32.5
Physical Injury								
Yes	55.6	50.2	59.1	53.1	57.5	62.8	43.2	59.2
No	13.5	9.9	6.8	11.2	14.9	7.8	6.8	10.7
NR	30.9	39.9	34.1	35.7	27.6	29.4	50.0	30.1

In terms of hijacking males (10.5%) were slightly less fearful than females (19.2%). With regard to house break-ins, males felt that it was more prevalent (3.3%), while females (14.1%) were more fearful. Both sexes were fearful of losing their lives or that of a loved one. However, again females (23.4%) experienced greater fear than males (14.2%). Interestingly, males (2.5%) did not experience as much fear of being murdered

as females (20.1%). This was similar to results for robbery, which also revealed greater fear from females (10.5%) than males (0.7%). In terms of sexual violence females (30.9%) were more afraid than males (13.1%). And similarly, females (12.6%) feared physical injury more than males (1.8%).

To summarise, there is a marginal but important variance for fear expressed by females compared to males. An analysis according to gender indicates marginal differences for fear of hijacking, loss of life and robbery for both sexes. Females were more afraid than males of house break-ins, physical harm, murder and sexual violence.

Table 4.3 illustrates that the prevalence of crime is not always equal to perceptions of fear. Therefore, merely addressing actual crime does not decrease individual perceptions, especially for victimisation (which creates a heightened sense of vulnerability). Respondents were also asked to provide examples of other crimes occurring within the community, which were not included in the questionnaire (Table 4.4). Interestingly, males were more aware of the prevalence of domestic violence and sexual assault. These are typically female responses, because women are more acutely alert to such types of crime. Nonetheless, these responses from males could indicate the positive impact of social development and education programmes targeting men, in Wentworth, and raising awareness about the role of men in the protection of women and children against violence (Looklocal, 2012).

Table 4.4 shows that substance abuse (drug and/or alcohol abuse) was recorded, by females, as the most frequently occurring crime. A possible reason for this was:

The Wentworth society is riddled with crime and drugs, which we trying to address in partnership with various organisations. We hope to bring down the statistics within the community" specifically indicating that the community faces "a lot of drug and alcohol problems and violence

(Govender, Interview, 2013).

Moser (2004) contends that gender-based violence, particularly male on female victimisation, is triggered by substance abuse. Other reasons for this high response rate can be attributed to first, violence linked to substance abuse (Moore, 1990); and second, the link between incidences of youth violence, gang activity and drug abuse (Miller,

1990). The prevalence of gangs and related violence has posed a problem, and is a concern in the Wentworth community, for decades. The involvement of youth in drug dealing and gang activity or violence is frequently brought before the attention of the SDB ABM Office and the SDB CSF. For instance, in 2011 and 2012, a spate of gang violence in and outside schools plagued the community.

Table 4.4: Prevalence of other crimes in Wentworth²²

Crime Type	Male (nr=15/40)		Female (n= 25/40)		NoDem (nr = 7/40)		Total (n=40)	
	n	%	N	%	n	%	n	%
Physical Injury								
Child Abuse			1	3.1			1	1.9
Domestic violence	1	6.7					1	1.9
Gangsterism	3	20.0	1	3.1			4	7.5
Taxi Violence			1	3.1			1	1.9
Violence	2	13.3	2	6.3	1	16.7	5	9.4
Women Abuse			1	3.1			1	1.9
Murder								
Attempted murder	1	6.7					1	1.9
Robbery								
Theft			1	3.1			1	1.9
Sexual Violence								
Rape	1	6.7	4	12.5			5	9.4
Sexual Abuse	1	6.7					1	1.9
Other								
Abandoning of babies			1	3.1			1	1.9
Boycotting	1	6.7					1	1.9
Child Prostitution			1	3.1			1	1.9
Drug dealing	1	6.7					1	1.9
Harassment			3	9.4			3	5.7
Human Trafficking	2	13.3					2	3.8
Illegal Abortions			1	3.1				
Illegal Dumping			1	3.1			1	1.9
Kidnapping	1	6.7	2	6.3			3	5.7
Substance Abuse	1	6.7	11	34.4	5	83.3	17	32.1
Verbal Abuse			1	3.1			1	1.9

²² Respondents provided any number of responses.

The situation escalated, resulting in deaths of young people from clashes with rival gangs. The gang violence permeated into the community and the local high schools as well (SDB CSF Minutes, 2012). Rivalry between gangs from different sections of the community resulted in young people being unable to pass through some parts of the community for fear of being associated with a particular gang or area, and subsequently being victimised. These issues emerged during this study (Table 4.4). Sequentially, Table 4.4 indicates that the most common forms of crimes were gangsterism (20.0%) and general violence (13.3%) cited by males. Conversely, females mentioned substance abuse (34.4%), rape (12.5%) and harassment (9.4%) as problems.

To understand whether the respondent's feelings about crime were similar to actual crime statistics, the researcher examined the crime data of the Wentworth South African Police Service (SAPS). Table 4.5 reflects an increase in all seven categories of crime over a nine-year period, (2003/2004-2011/2012) for Wentworth SAPS (Provincial crime statistics, www.crimestats.com). Using raw data from the official crime statistics, the researcher calculated the aggregate increase in the subcategory of crimes for each main category. The three categories with the highest growth were:

- i) Contact crimes that increased by one-hundred percent
- ii) Crimes heavily dependent on police action for detection increased by sixty-six percent and
- iii) Property related offenses increased by fifty percent

There was also a forty-four percent increase in other serious crimes (commercial crimes and shoplifting). The high recording of commercial crime in a residential area can be attributed to the juxtaposition of Wentworth between industrial and commercial zones.

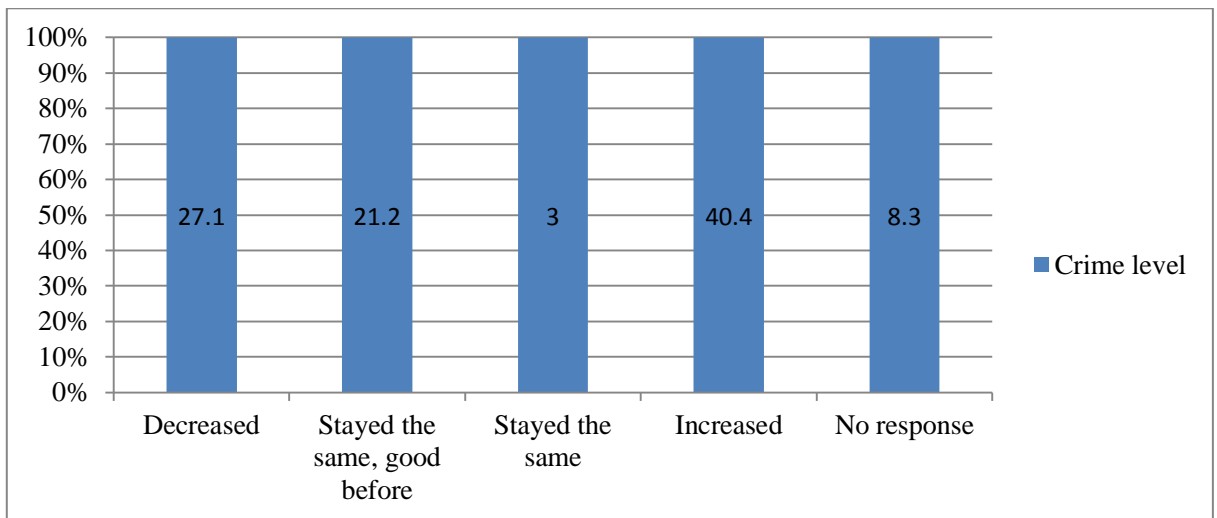
Table 4.5: Increase in all categories of crime in Wentworth between 2003/2004 – 2011/2012

Main category of Crime	Sub-category of Crimes	Increase in %
Contact crimes	murder, total sex crimes, attempted murder, assault with the intent to inflict grievous bodily harm, common assault, common robbery, robbery with aggravating circumstances.	100
Contact related crimes	(arson, malicious damage to property)	13
Property related crime	(burglary at non-residential premises, burglary at residential premises, theft of motor vehicle and motorcycle, theft out of/ or from motor vehicle)	50
Crimes heavily dependent on police action for detection	(illegal possession of firearms and ammunition, drug-related crime, driving under the influence of alcohol and drugs)	66
Other serious crimes – All theft not mentioned elsewhere	(commercial crime, shoplifting)	44
Subcategories forming part of aggravated robbery	(carjacking, truck hijacking, robbery at residential premises, robber at non-residential premises)	9
Other crime categories	(culpable homicide, public violence, crimen injuria, neglect and ill-treatment of children, kidnapping)	10

Source: Adapted from the Provincial Crime Statistics (2011/2012) (www.crimestats.com).

The nature and extent of crime experienced by communities is very different from the picture being portrayed by government in terms of declining levels of crime (Bruce, 2010). The researcher further analysed crime most prevalent and most feared in Wentworth (Table 4.3) in conjunction with the official crime statistics recorded for the Wentworth SAPS, (Table 4.4). This analysis revealed that the community's perception of the prevalence of certain crimes were not far off from actual criminal incidents. For instance, the SDB Quality of Life Survey (UrbanEcon, 2006) found that community members believed that crime had increased (40.4%) in the Merewent area (Figure 4.8). In addition, a comparison between Table 4.3 with Table 4.2 revealed that the prevalence, and fear, of crime were directly related to the nature of victimisation. These findings were further reinforced by interviewees, for example, stating that *"I don't think that their (the community's) perception and what is actually happening is different from each other, they on par"* (Pillaye, Interview, 2013).

Figure 4.8: Level of crime in the greater Merewent precinct



Source: Adapted from UrbanEcon (2006).

Crime rates provide insight to the nature and extent of criminality and victimisation. However, these statistics must be 'taken with a pinch of salt' as they may not reflect the actuality of crime incidents. At a meeting held at the Bluff, (an area next to Wentworth) (June 12, 2012), attendees argued that crime statistics were high for the Bluff area. However, Captain Mathonsi, responding on behalf of the Brighton Beach SAPS, indicated, *"crime statistics are not a true reflection of crime within an area, because even one crime committed is reflected as a hundred percent of crime"* (Councillors Breakfast Briefing, 2012).

The manipulation of crime data at station level is not uncommon. In the Western Cape, the city central police station downplayed the nature and extent of crime by indicating that no business robberies were taking place. This was in contradiction to statements from local business owners who had reported various business related crimes (Smook, 2007). In another case four policemen appeared in court for manipulating crime statistics to improve the image of the station, by recording housebreaking as trespassing (Newham, 2011). Smook (2007) contends that excessive increases in crime, results in station commanders being replaced. At the Mountain Rise police station in Pietermaritzburg, a SAPS inspector was suspended after alleging that statistics were being manipulated at the station (Bruce, 2010). Therefore, in some instances crime data is changed to 'balance out crime' and secure the jobs of officials. One reason for this lack of recording by stations is as a result of the Police Performance Charter, a

computerised system linked to the SAPS Crime Administrative System of each station. Incentives, in the form of performance bonuses are allocated to stations which record the least amount of crime (Bruce, 2010).

Bruce (2010) contends that though there are various media reports of manipulation of statistics, most of these do not relate to serious and violent crime. For instance, it is difficult to not record murder because a body is proof of the crime. However, crime statistics can be theoretically flawed, especially when studying neighbourhoods. Neighbourhoods are separated by race, class, ethnicity, poverty and other demographic variables. The relationships between these variables are important for understanding crime. For instance, criminals and victims may not be from the same area where the crime is committed, thus using census crime data is unsound and portrays a distorted image of crime (Zhang and Peterson, 2007). Crime statistics are limited because they do not consider the geographical or social-demographic variables. In doing so, the recording of crime is standardised and loses its meaning to the reality of such incidents within heterogeneous communities (Zhang and Peterson, 2007).

The lack of transparency in the collecting and reporting of crime statistics, and the media representation of corruption of the police force, results in the public losing confidence in the ability of government to provide adequate safety and security. Therefore, addressing crime in communities becomes challenging:

Government has often appeared to view these statistics primarily in terms of the negative image they might create. Government ministers have variously tried to restrict their availability, to the point of imposing a complete moratorium on their release from July 2000 to May 2001. Crime has thus in many ways been a matter of image management for government, rather than an incentive to develop proper strategies for reducing crime. The credibility and integrity of SAPS crime statistics are now casualties of this approach

(Bruce, 2010: 16).

Crime data is critical to develop prevention strategies. Although not qualitatively detailed, the statistics provide a context for interpreting the crime typology of residential areas. Continual review of fluctuations in the data also directs the development and implementation of different prevention strategies. The Greater Merewent area is served

by one police station, the Wentworth South African Police Service (SAPS). Again, the complexities in the demarcation of the various areas under Greater Merewent pose a problem for assessing crime data. The SAPS contact directory lists contact numbers for Wentworth and Brighton Beach Police (for Bluff, next to Merewent) stations, only, for Merewent and surrounding Bluff areas (SAPS Contact Directory, www.saps.gov.za). The Clairwood and Jacobs areas have no designated police stations. This results in Wentworth responding to and documenting call-outs in Merebank, Wentworth, Clairwood, Jacobs. Official statistics are captured by the station according to its crime category, but not by area. Thus, the statistics do not provide an accurate reflection of specific crimes in Wentworth. However, it does provide an outline of the different categories of crime across a wide geographical area.

Brodie (2013) contends that crime statistics only cover crimes that are reported to the police and are released annually and cover crime that was recorded in the previous year. This is a flawed process because at the time of release these statistics are out-dated by six months. Thus, the crime data does not reflect current patterns or trends. Furthermore, he proposes that while this data assist in establishing trends, it does not useful when developing prevention strategies. In view of this, it is reasonable to assume that the spatial analysis of crime should be based on crime rates and, the demographic and geographic characteristics of communities. Based on the above arguments, the researcher questioned how (beyond the use of crime victimisation statistics to assess vulnerability) the physical environment influenced crime.

4.5. PLANNING, DESIGN AND CRIME

4.5.1 Planning, design and crime in context of apartheid

The literature review (Chapter two) showed that apartheid policies had negative ramifications on planning and design, and subsequently crime. This study examined whether apartheid had influenced existing planning and design problems and the associated impact of crime²³. This study found that residents were aware of this fact, because respondents agreed that apartheid planning and design did impact existing

²³ NB: Reference to planning and design refers to planning and design as designated by the CPTED model and its five principles.

planning and design (P&D)²⁴ and crime problems (Figure 4.9). Respondents also indicated that re-planning and designing would reduce crime (Figure 4.10):

Apartheid planning and design is the reason that crime is the way it is, because it took people from areas, when they brought in the group areas act, and they just lumped everybody together, and it was a simmering pot that was just waiting to explode. And this is evident of what we still looking at today, if you look at the teenagers that are now involved in crime it stems right back to when they first brought the first person to Wentworth in 1951...

(Leverton, Interview, 2012).

Spinks (2001) argues that apartheid was a kind of geospatial confinement for Black communities, an effect evident within Wentworth, *"yards are too small; you can't come out of your lounge without looking into your neighbour's kitchen. So that sort of planning has definitely had a negative effect"* (Leverton, Interview, 2012).

Segregating communities and people via planning and design, influences both crime and present planning and design problems in the community. An example of such conditions was the 'barracks', a set of housing units located on Tara Road, opposite the Engen oil refinery (Meth, 2010). Plate 4.1 illustrates the location of the refinery behind the barracks housing small units.

²⁴ For the purpose of this study, planning and design is abbreviated as 'P&D' for easy use and readability on figures.

Figure 4.9: Impacts of apartheid on existing crime and planning and design problems in Wentworth

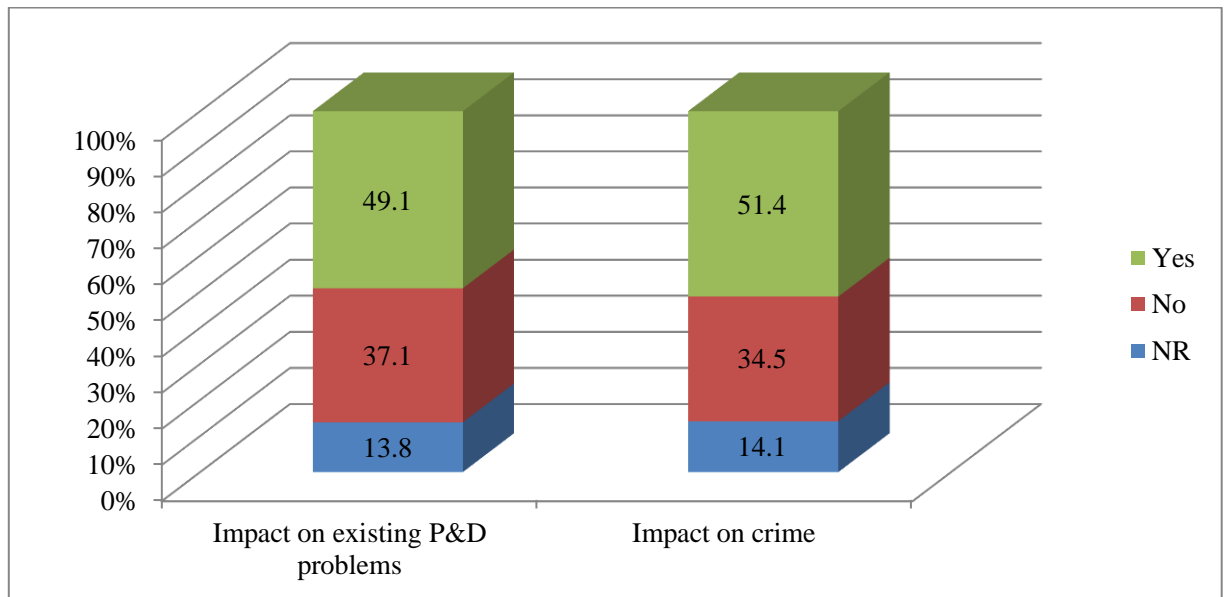


Figure 4.10: Planning and design and its effect on crime reduction in Wentworth

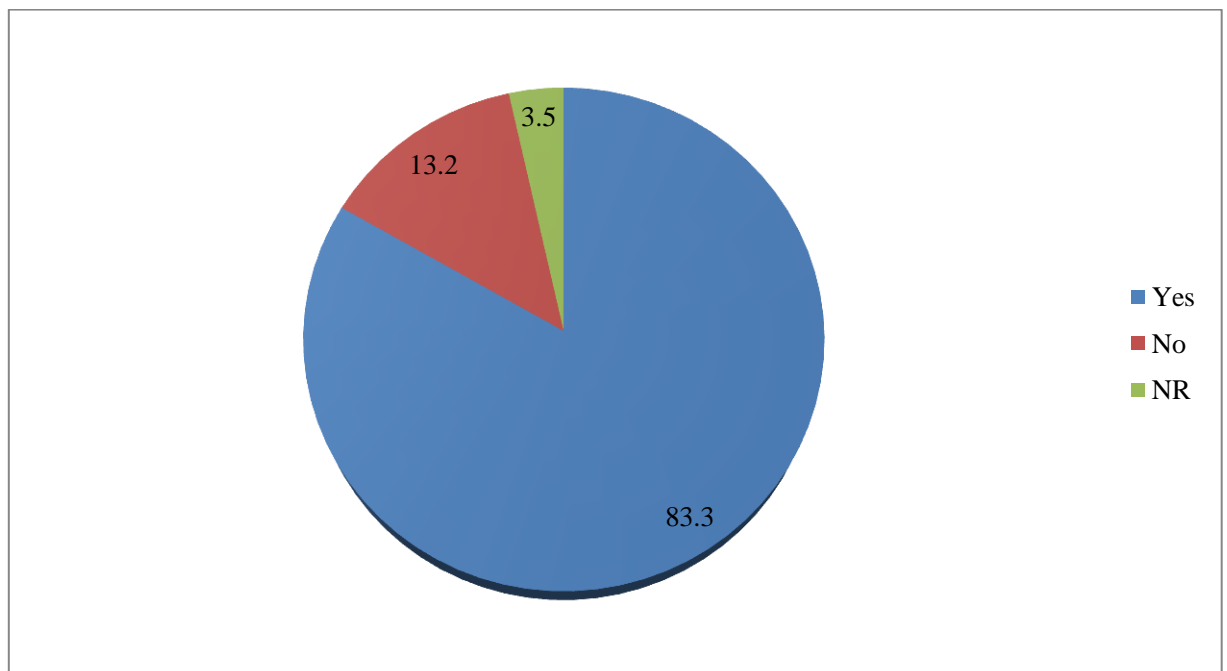


Plate 4.1: The location of barracks housing units in Wentworth opposite the Engen Refinery



Source: South Durban Multi-point Plan Case Study Report (2007).

These council houses were built as a transit camp in 1972, to house people forcibly removed from various parts of the city and relocated to the SDB under the Group Areas Act (1950). Each section (of the SDB) was designated for specific racial groups, with Coloured being located within Austerville/Wentworth. Figure 4.11 illustrates the segregation of people into demarcated residential areas according to race during the 1950s. Compared to Indians (Asiatic) and Europeans, Coloureds were designated to a very small area.

Nearly a decade (2010) later, people continued to fill the units that now include extended families living in cramped structures ideally designed for nuclear families (Schutte, 2010). The lack of investment in low income housing by government during the apartheid era and the subsequent failure by the democratic government to provide adequate service delivery, resulted in the dilapidation and neglect of the units in Tara road.

With limited choices available, residents were forced to move into the new barracks, which they hoped would be bigger and of better quality. However, they were moved from flats averaging fifty-nine square meters to smaller units that were only 49 square meters (Meth, 2010). Residents indicated that the units were smaller than the previous units; the disabled and wheelchair users were not accommodated, with limited recreational space for children and numerous defects in the building (Meth, 2010; Sanpath, 2010; Schutte, 2010) this was emphasised by an interview Leverton (2012) who stated that, *"if you go and look at those buildings and the structure the old barracks was much better, the place they living in now is not a sustainable structure at all"*.

Yunus Saccor, from provincial government Department of Housing, in an interview with Gillian Schutte of Media for Justice (2010) stated that the size of the land and funding was not enough to build bigger units, and although extended families were not counted during the development, ample space exists between units for kids to play (Schutte, 2010).

The demolition and subsequent development of the new barracks is evidence of the negative effect of apartheid planning and design policies. The location of the community near major industry, on the periphery of the city makes them vulnerable to crime. Apartheid planning did not consider the growth of communities. Studies indicate that population growth plays an important role in crime and victimisation. For example, areas of lower population density present fewer homicides, even under deprived socio-economic conditions (Mazopolous *et al.*, 2007). Wentworth should ideally house less than the thirty thousand people currently occupying the area (Sutherland *et al.*, 2009). In addition, urbanisation and the growth in industry near the community, make it an ideal residential spot for people working in and around the SDB. This increase in population has affected both, the demand for resources and escalation of violence. Evidence of this was found in the 'barracks' units, where overcrowding and unemployment resulted in the area becoming a haven for substance abuse and related violence (Meth, 2008).

The socio-physical conditions of the barracks serve as a symbol of decay and violence within the community. They negatively shape the perception of the area and its people

by both residents and outsiders. Simply destroying the 'old barracks' did not solve the problems as crime and social decay have continued to flourish within the 'new barracks':

All the planners did was remove people from the barracks, which was considered too close to Engen, and put them in the new barracks. This didn't change anything. They are worse off in the new barracks than they were in the old ones, the condition, and planning of the new barracks was terrible

(Leverton, Interview, 2012).

The 'barracks' reflect how apartheid planning and design influence crime and victimisation and also had a bearing on the existing planning and design problems. The original development served as a transit camp, and was not built to be aesthetically pleasing, or to improve the quality of life. The new development, although attempting to improve the lives of residents, is limited, by its lack of space for growth. A site analysis of the development shows that the units are located along one of the major road routes that link Wentworth and surrounding areas in the SDB industrial area. There is no recreational space in the complex for children. Open spaces outside and opposite the complex are unfenced and unkempt. Not only are these spaces unsuitable as recreational areas, but they can only be reached by (children), crossing roads with heavy traffic.

Examining the influence of apartheid planning and design on existing problems in the built environment and crime, highlights an important question for the application of CPTED: How can CPTED be implemented in a community affected by apartheid planning and design, without redesigning or re-planning? One suggestion would be using the model via service delivery, which, in effect, is an approach used to uplift communities and enhance the quality of life. For instance, service delivery an achievable goal, made possible by local government by increasing the image and aesthetics of the community, thereby creating, securing and maintaining public places. Not only would the implementation of the model address issues within the built environment through planning and design, but also reduce crime. Understanding the relationship between planning and design problems and its effect on crime, influences the effective implementation of each principle of the model.

4.5.2 Crime, planning and design

This study aimed to evaluate whether the CPTED model could be applied in the Wentworth community. To do this the researcher had to determine whether crime was taking place in areas with planning and design problems. The locations of crime provide direction about approaches to address it (Lieberman and Coulson, 2004). To understand where crime was occurring and how physical and environmental features influenced it, respondents were asked to highlight crime hotspots within the community. The respondents were also requested to provide information about planning and design problems in Wentworth. The role of residents to spatially locate crime that can be associated with planning and design problems is central to CPTED, being implemented efficiently.

Eck *et al.* (2005) define crime hotspots as zones where disorder and criminal activity is disproportionately high compared with its surroundings. A variety of different factors affect types of crime within particular areas. One such factor is planning and design:

It is often brought to my attention issues around crime and grime, and the relationship between environmental factors like trees and bush and overgrown verges and those kinds of things. Together with poor lighting, those issues come to the attention of my office very often. And, "in terms of looking at the built environment, and how it relates to crime, we definitely aware of the impact of environmental design on crime, especially in our crime prevention and community safety meetings. There is definitely a link between the way the environment looks and crime

(Singh, Interview, 2013).

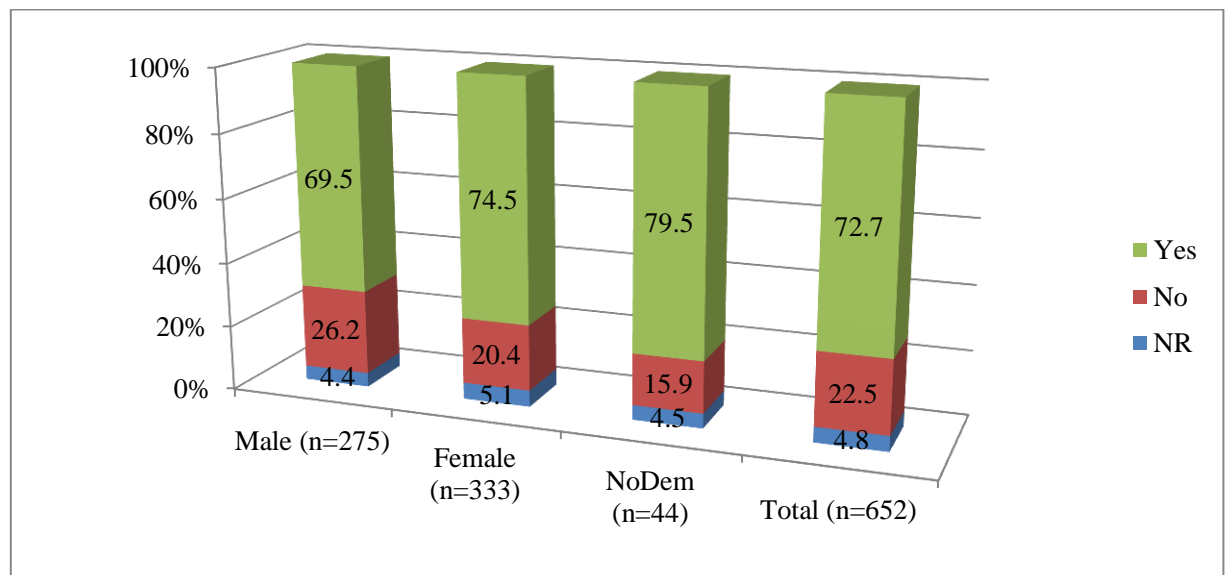
Figure 4.12 indicates that more than half the total respondents indicated the existence of crime hotspots (72.7%). This data, when analysed according to gender, revealed that both males and females were similarly aware of crime hotspots.

Understanding the relationship between crimes and planning and design, would, by virtue of the CPTED model, provide a foundation to implement the model. According to Shaw and McKay's (1949) zonal hypothesis and social disorganisation theories, the built environment of communities not only influences crime and safety, but also

determines the nature and extent of crime. For instance, derelict and unmaintained areas would attract greater criminal activity than well maintained or designed sites. Furthermore, the juxtaposition of residential and unaesthetically pleasing commercial/industrial areas in Wentworth creates hotspots and exposure vulnerability:

Large urban and commercial areas, and suburban areas deficient in recreational and educational amenities with inadequate law enforcement structures, few employment opportunities, insufficient security measures and poor environmental and architectural planning provide greater opportunity for crime and victimisation (Davis and Snyman, 2005:37).

Figure 4.12: Presence of crime hotspots in the community



To determine the relationship between planning design and crime, respondents were asked to provide the names of roads or areas that they considered as crime hotspots in the community²⁵. In addition, a list of planning and design problems was outlined for respondents. They were asked to indicate roads or areas in the community that exhibited those problems²⁶. Table 4.6 and 4.7 shows the number of responses for each set of problems. These responses were compared to illustrate roads where issues, crime, and planning and design existed. The pairing of the responses (Table 4.6 and 4.7) reveals that crime occurs more frequently on roads experiencing planning and design problems. Table 4.6 illustrates the severity of planning and design problems, which are categorised

²⁵ See Appendices Two – Question 2: Crime, sub-section 2.9.

²⁶ See Appendices Two – Questionnaire 3: Crime and Design, sub-section 3.3.

as either high (40.1 – 80.0), medium (10.1 – 40.0) or low (0.0 – 10.0). Conversely, Table 4.7 illustrates the level of crime according to the three categorisations of planning and design problems.

Table 4.6 Colour coded Severity of Planning and design problems and Crime hotspots

Road	P&D	Crime	Road	P&D	Crime	Road	P&D	Crime
Low (0.0-10.0)			Medium (10.1-40.0)			High (40.1-80.0)		
Amoora Rd	5	4	Burgers Rd	28	45	Hime St	55	69
Assegai Rd	4	5	Pascal Rd	24	38	Pannax Plc	76	76
Cycas Rd	4	5	Reiger Rd	34	30	Rooks Rd	45	21
Goedehoope Rd	1	1	Woodville Rd	28	55	Wolraad Rd	70	55
Ixora Rd	1	1	Croton Rd	31	24	Major Calvert Rd	41	39
Jasper Plc	3	5	Austerville Dr	14	16			
Jonas Rd	4	3	Alabama Rd	21	20			
Lubbe Rd	2	1	Duranta Rd	20	5			
Ogle Rd	8	7	Lansdowne Rd	16	24			
Olive Grv	2	5	Richard Winn Rd	19	31			
Sunbeam Av	3	1	Silvertree Rd	11	14			
Theron Rd	1	3	Tara Raod	14	9			
Tifflin Rd	7	5	Tuin Rd	21	19			
Victor Lawler Rd	3	3	Weist Rd	24	22			
			Gardenia Rd	13	22			

Table 4.7 Level of Crime according to the severity of Planning and Design Problems

	Low Crime (0.0 - 10.0)			Medium Crime (10.1 - 40.0)			High Crime (40.1 - 80.0)		
	Road	P&D	Crime	Road	P&D	Crime	Road	P&D	Crime
Low Planning and Design Problems	Amoora Rd	5	4						
	Assegai Rd	4	5						
	Cycas Rd	4	5						
	Goedehoope Rd	1	1						
	Ixora Rd	1	1						
	Jasper Plc	3	5						
	Jonas Rd	4	3						
	Lubbe Rd	2	1						
	Ogle Rd	8	7						
	Olive Grv	2	5						
	Sunbeam Av	3	1						
	Theron Rd	1	3						
	Tifflin Rd	7	5						
	Victor Lawler Rd	3	3						
Medium Planning and Design Problems	Duranta Rd	20	5	Alabama Rd	21	20	Burgers Rd	28	45
	Tara Rd	14	9	Austerville Drv	14	16	Woodville Rd	28	55
				Croton Rd	31	24			
				Gardenia Rd	13	22			
				Lansdowne Rd	16	24			
				Pascal Rd	24	38			
				Reiger Rd	34	30			
				Richard Winn Rd	19	31			
				Silvertree Rd	11	14			
				Tuin Road	21	19			
				Weist Rd	24	22			
High Planning And Design Problems				Major Calvert Rd	41	39	Pannax Plc	76	76
				Rooks Road	45	21	Hime St	55	69
							Wolraad Rd	70	55

The data from Table 4.6 was mapped to geospatially illustrate the location of planning and design problems (only) in Wentworth (Figure 4.13). A comparative analysis of the map shows that there are fewer roads with high planning and design problems (Figure 4.13). However, the severities of these problems are concentrated on roads at the centre of the map. A site analysis of these roads indicates that residential properties tend to be smaller and crowded close together. These properties lack aesthetic appeal, fencing, adequate lighting and general overall maintenance. There are also a number of provincial flats around roads categorised as high. The problems around these areas are also compounded by the prominent juxtaposition of residential homes with industry.

Figure 4.13 also shows that the majority of the planning and design problems tend to range from medium to low. An *in loco* site analysis in Wentworth revealed that areas with low planning and design problems were more aesthetically pleasing, homes were being privately rented or owned, and home owners were investing in their properties by taking care of the immediate environments both in and outside the home. There is minimal overgrown bush and less garbage on the streets.

Using the data from Table 4.7 another map of Wentworth (Figure 4.14) was developed to illustrate the level of crime within each category of planning and design problems. Analysing the occurrence of crime hotspots according to the this categorisation was important for demonstrating why some roads experienced high planning and design problems, yet exhibited low levels of crime and vice versa (Table 4.7). For instance, respondents indicated that some roads had a medium severity of planning and design problems, but exhibited low crime. For example, Table 4.7 indicates two such roads Basil February (P&D=20 and Crime=5) and Tara road (P&D=14 and Crime=9), which exhibit this dissimilarity (shown as lightest blue on Figure 4.14).

Further analysis of these two roads in relation to its surrounding areas indicate that they are main transport routes and serve as link roads to the surrounding community and industry. The use of these routes by heavy motor vehicles has resulted in damage of the roads and pavements. There is also presence of overgrown foliage. Therefore, while physical conditions of these roads are poor, they have minimal influence on crime. Although crime is low on both roads, Tara road has a slightly higher crime ranking than Basil February Road. This could be attributed to the presence of homes along a section

of the road. House burglary or other contact crimes may explain the higher incidents of crime on this road compared to the other.

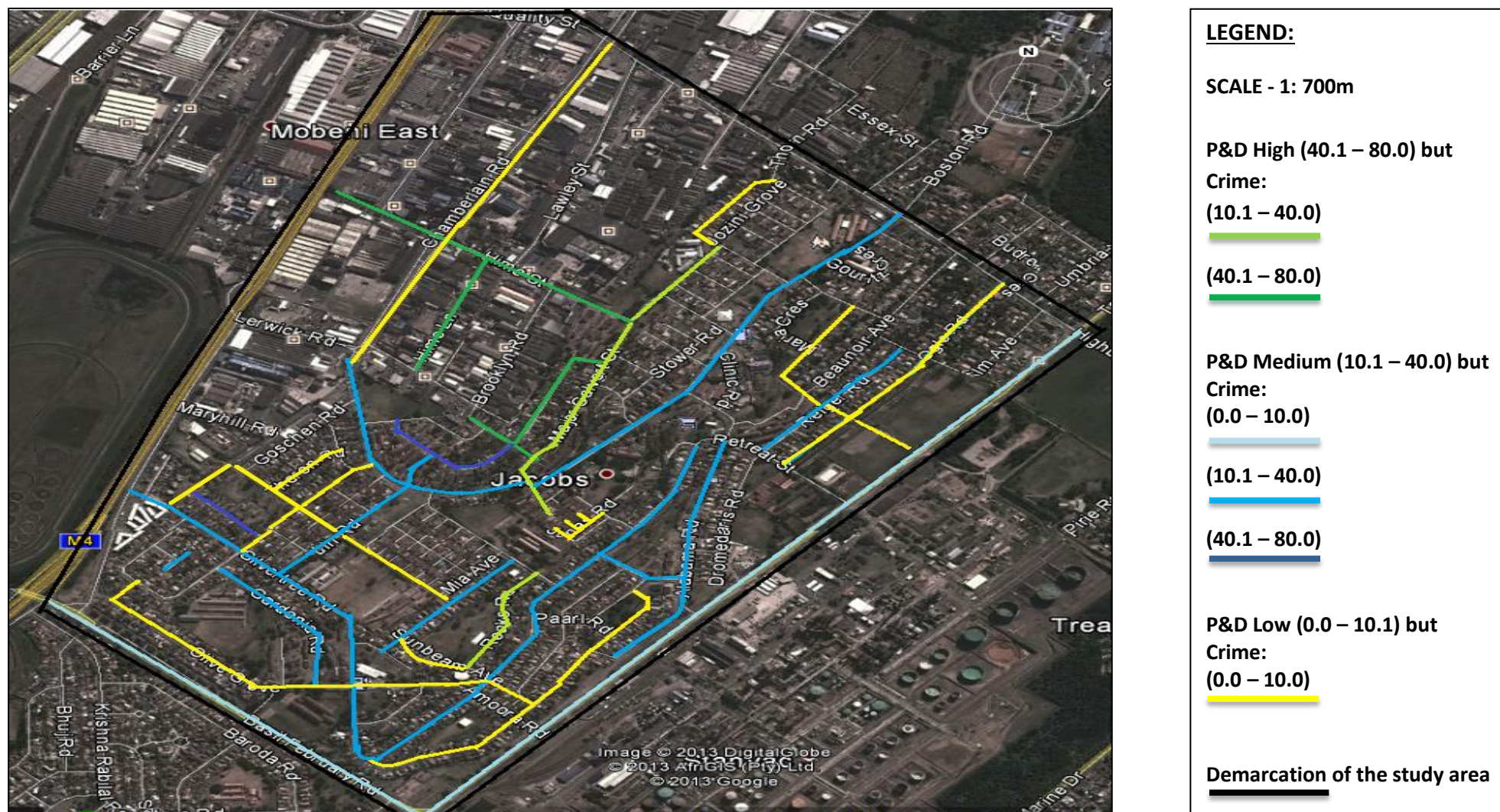
Table 4.7 shows a number of roads with planning and design, and crime problems categorised as medium. This was represented as light blue on the map, and covers a large area of the community (Figure 4.14). The similarities between the severity of planning and design problems to the level of crime indicate that the condition of the physical environment is influencing criminal activity. Interestingly, two roads (Woodville and Burgers) was categorised as having medium planning and design problems, yet exhibited a high level of crime (represented as darkest blue on the map, Figure 4.14). This can be attributed to location of the roads. Burgers Road was situated behind commercial property, thus creating greater residential vulnerability. On the other hand, the high level of crime at Woodville Road (illustrated by dark blue in centre of the map - Figure 4.13) could be a result of the road being positioned next to areas with flats. Flats demonstrated a multitude of planning and design problems, such as lack of aesthetics, over grown bush and garbage around the buildings.

Similarly, Table 4.7 also shows that areas where planning and design problems were categorised as high also had a crime ranking of medium or high. In Figure 4.13 these roads are colour coded as red and green in Figure 4.14. An *in loco* site analysis revealed that these roads were found to have concentrations of provincial flats. The majority of residents in Wentworth live in provincial flats that are in extremely poor conditions (SDCEA, 2008/2009). These poor conditions have created criminogenic environments around these buildings. These buildings tend to exhibit a multitude of planning and design problems and are associated with crime and grime. Similarly, respondents, besides identifying specific areas/places such parks, schools and grounds, also indicated that the condition of provincial flats were a problem in the community.

Figure 4.13: Map showing the severity of planning and design problems in Wentworth



Figure 4.14: Map showing the level of crime according to each category of planning and design problems in Wentworth



Community members argued that gang violence was rife within certain areas, like "*Panax, Gardiner, ITB, Pascal and Jonas areas*" (SDB CSF Minutes, 2012). Not only did these roads contain numerous blocks of flats, but they also had the most amount of planning and design issues (Table 4.6 and 4.7). An *in loco* examination of the areas reveals that are located in the vicinity of blocks of flats. The characteristics of flat life can be compared to Shaw and McKay's (1942), 'cultural transmission and social disorganisation theories'. Not only is the environment providing cues on how one should behave, but the culture of violence and drug use is passed on from one generation to the next. Such social disorder eventually leads to the disintegration of the physical environment. As argued by Wilson and Kelling's (1982) broken windows theory, the subsequent break down of the physical environment (grime and disorder) will transgress from incivilities to serious crime. Thus, these areas thrive like cities, by socially growing, changing and engaging in economic activity related to drug use and dealing. This behaviour is passed on from one generation to the next. The neglect of the social environment of these flat as led to the fragmentation of the physical environment, which has only served to induce crime and vulnerability.

The irony is that social cohesion amongst residents of provincial flats is strong (Nurick and Johnson, 1998). As a result of this, gang affiliations within each set of flats are strong. In some instances gangs from one section feel the need to fight for and protect their members from gangs from other parts of the community. Though this represents the negative side of what CPTED and Newman's defensible space theory intended, it does indicate that increasing positive social cohesion and territoriality with increased aesthetics and target hardening, will decrease crime and improve quality of life.

The maps of Wentworth clearly indicate that areas with planning and design problems in Wentworth overlap with crime hotspots. While the condition of the physical environment does play an integral role in the vulnerability of residents, other factors such as the juxtaposition of the community with industry and major transport routes also hinders safety. It is important to notes that not all planning and design problems will cause crime. However, the extremely poor environmental conditions which lead to and perpetuate crime in one area will, if not addressed, eventually diffuse to other parts of the community. As shown, in some areas planning and design problems may be less severe, yet exhibit high crime or vice versa.

Thus, in assessing whether CPTED could be implemented in Wentworth, the researcher examined specific problems within the physical environment that affected crime and victimisation. Each of the CPTED principles were analysed according to its applicability to the related problems in the Wentworth community.

4.5.3 Planning and design problems that affect crime and fear of victimisation

Crowe and Zahm (1994:22) state that, *"proper design and effective use of built environment can reduce the fear and incidence of crime and thereby improve the overall quality of life"*. The availability of physical infrastructure and social amenities are associated with less crime, while poorly resourced areas experience more crime (Zambuko and Edwards, 2007). Thus, crime does not affect everyone equally. The poorest and most marginalised communities or people experience more crime. Some reasons for this, lie in not just the socio-economic deprivation of such communities, but are due to the lack of physical infrastructure to hinder crime (Butts and Snyder, 2007).

The researcher aimed to determine the feasibility of each of the CPTED principles. Using a list of planning and design problems (Table 4.8) respondents were asked to indicate whether each problem influenced crime and/or victimisation. The researcher then paired each problem with its corresponding CPTED principle to provide a contextual framework, against which the model could be assessed. Table 4.8 indicates that the majority of the respondents agreed (+60%) that the various planning and design problems that exists in the community, influenced crime and fear of victimisation. Only the problem of vacant spaces received a response rate of less than sixty percent.

i) Principle 1 - target hardening

Fencing and walls can physically protect spaces. In addition, they also create a sense of ownership over space. For instance, fenced off areas can protect spaces such as parks or blocks of housing units. This encourages people to take care of that space, which they view as 'their space'. It would also deter criminal behaviour. Target hardening also refers to Principle 4 – Surveillance and Visibility, specifically CCTV²⁷.

²⁷ Discussed in Chapter Two: 2.4, The Five Principles of CPTED, sub-section 2.4.1.

Plate 4.1 depicts one of the many parks in Wentworth where fences and recreational equipment has been damaged. The park is overgrown with bush that create easy hiding spaces for would be criminals and other individuals engaging in unsavoury activities. The lack of fencing has resulted in residents using the space as an illegal dumping site. Due to the dilapidated and poor conditions of the park, children are unable to use the facilities.

Table 4.8: Types of planning and design problems influencing crime and fear of victimisation in Wentworth

CPTED Principles relating to survey questions	Category of planning and design issues	Influences crime			Influences Fear of Victimisation		
		Yes	No	NR	Yes	No	NR
Principle 1 - Target hardening	No fencing/walls around spaces prone to crime	64.3	9.0	26.7	60.6	8.6	30.8
Principle 2 – Image and aesthetics & (Principle 3 – Access and Escape routes)	Overgrown trees and bush	66.4	8.9	24.7	63.8	7.7	28.5
	Neglected areas	61.7	11.2	27.1	64.1	7.2	28.7
Principle 3 – Access and Escape routes	Access and escape routes for criminals	63.5	6.7	29.8	61.3	6.3	32.4
	Vacant spaces	55.8	15.8	28.4	59.2	12.7	28.1
Principle 4 – Surveillance and Visibility & (Principle 1 - Target hardening)	Dark, lonely spaces	68.3	7.1	24.7	68.3	6.1	25.6
	No lighting at night	65.2	11.7	23.2	68.9	5.8	25.3
Principle 5 – Territoriality	Community attitudes/response to crime	61.3	9.0	26.7	60.3	10.3	29.4

Fencing certain areas like parks or sports grounds can be beneficial in curbing the use of such environments during certain times, like at night. However, target hardening must be done in a manner that is inclusive and positive without hindering crime prevention:

If (for instance) you don't fence the park then you going to get people's cars going in, and that's where they drink and have their little parties and what not, and that hampers public space", but when fencing is used it should facilitate "regular

patrols in the park, (like) putting post and pole fencing so that the metro police or SAPS can ride through the park with their motorbikes (Singh Interview, 2013).

Plate 4.2: An unfenced park results in dumping in Wentworth



Target hardening must be done in conjunction with the maintenance of space as well. Maintaining these spaces will also reflect a sense of ownership and care for the space, as well as reduce resident's abuse of it (Plate 4.2). Curbing antisocial behaviour is imperative to address crime problems and preserving the image and aesthetics of a community. According to Wilson and Kelling's (1982) broken windows theory, incivilities and antisocial behaviour if left unchecked, will transgress into serious crime. Thus, this behaviour although not categorised as crime, can lead to crime. For instance, recreational areas are generally vandalised and destroyed by deviant youth or individuals. The destruction of property will decrease the community's use of such spaces, resulting in the space becoming a haven for deviant and criminal behaviour. These become neglected and unused areas that pose safety hazards.

ii) Principle 2 – image and aesthetics

Image determines how a community is perceived and associated risk within that space. Principle 2 can be used to uplift and improve quality of life through continuous maintenance of spaces. In light of this, the CSF in partnership with the Department of Safer Cities, conducted ward safety profiles, which revealed similar findings. The profile aimed to identify crime and environmental problems within the community. The profile found that *"no lights, overgrown bushes and drug abuse problems led to unsocial behaviour"* (SDB CSF Minutes, 2011b).

In the community, neglected upkeep of buildings, particularly provincial housing flats, is a cause for concern. The buildings lack proper maintenance and care, and are an eyesore. Crime and disorder thrive around these buildings (Plate 4.3). This is further compounded by the lack of lighting, the growth of unkempt bush and general neglect around the vicinity of the units (Plate 4.4).

Pastor Victor Smith, a member of the SDB CSF, stated:

When a place looks pleasing, people would want to take care and pride in their environments. This would drive out the people who cause crime and influence bad behaviour.....criminals will know that people care for and protect that place (CSF Minutes, 2011a).

Pastor Smith's approach to improving the image and aesthetics within the community was to paint murals on provincial flats. Not only would this make the flats look better, but the murals would be used to convey positive messages. An attempt by the SDB CSF to inquire whether a mural could be painted on the flats, proved to be difficult. The provincial government is responsible for these buildings, and numerous challenges exist in gaining permission to privately improve buildings, or to do so through local government. The above example demonstrates that while organisations and/or residents are willing to engage in crime prevention in their area, certain activities need to be approved by different tiers of government. This makes it difficult for residents to make improvements to the built environment without repercussions.

Plate 4.3: The poor exterior conditions of provincial flats in Wentworth



Illegal dumping is also a problem that frequently plagues areas around the flats. This portrays a negative image of these areas. Plate 4.5 shows the build-up of rubbish in a bricked space originally built for the residents of the flats to leave garbage for pick-up. The overflow may be a result of the structure's inability to control the flow of garbage, or residents from and around the flats illegally dumping garbage. Not only is the build-up of refuse a health hazard but it is also aesthetically unpleasing. Plate 4.2 and 4.7 also show dumping by residents in open spaces.

Plate 4.4: Bush surrounding provincial flats in Wentworth



One initiative aimed at improving the look of the community has been clean-up campaigns carried out by local government. The SDB ABM office regularly carries out such campaigns and target residents by involving them in the voluntary cleaning of hotspot areas for illegal dumping (Singh, Interview, 2013). These initiatives also touch on crime and grime awareness campaigns by educating residents about the effects of dumping on health and crime.

Beyond the appearance of the immediate environment, abandoned buildings also pose a risk to residents. These buildings, over time, become dilapidated and decrepit. In the Wentworth community, there are numerous unused buildings that have fallen into disrepair by their owners. Many of these tend to be industrial buildings and over time the physical decline influences criminal activity within the immediate vicinity.

Plate 4.5: Illegal dumping in Wentworth



Plate 4.6 depicts an abandoned building that is situated between residential homes. The building is not a home, but is architecturally structured as an office or recreational facility. Vandalism has resulted in broken windows, fencing and damage to the building, with bush and uncut grass surrounding the property. Given that is situated next to homes; it creates vulnerability for those living adjacent to it and is aesthetically unappealing.

An immediate short-term response to such a situation would be to uplift degraded buildings by painting, installing wire fencing and continuous cleaning of the area. A long-term response would be the creation of a body corporate to oversee maintenance, lighting and education in maintaining one's surroundings:

Very bad buildings harbour criminals, and we've worked by either giving the owner of the building notice or the building is demolished and used for productive purposes. Like setting up community gardens. There were also areas where there were overgrown bushes that became dumpsites, once the area is cleared; the land

was used for profitable purposes. In some areas there can be potential for sports fields to be drawn up, or (using the site of the demolished building by) making a clearer pathway clearer pedestrians to move from area to the next in a safe environment

(Pillaye, Interview, 2013).

Plate 4.6: Abandoned building between residential homes in Wentworth



Pillaye (Interview, 2013) provides alternative solutions for improving areas using aesthetics. She suggests changing the activity within certain spaces, and making it productive for the community. For example, she suggests converting vacant areas into community gardens. In this way, residents participate in community development projects, while ensuring continuous maintenance of the areas so that it does not become derelict.

An example of such a project was the Wentworth garden programme run by the SDB ABM office. A vegetable garden was set up by the local government office on

previously unused land. The office in partnership with various other local government departments, consulted with the community, built the garden and provided equipment. Interested residents underwent gardening training and were taught how, what and when to plant, and varying the produce. Income generated from selling the vegetables to locals, replenished the garden. The surplus unsold produce was given to the gardeners or sold to them by local vendors. This project is a typical example of a CPTED initiative, whereby derelict land was converted to a community friendly and usable space, while increasing local participation (Govender, Interview, 2013).

iii) Principle 3 – access and escape routes

Vacant spaces provide access and escape routes for criminals. However, they are also walking paths for residents. In Wentworth spaces, like pathways and open lots (Plate 4.2) are used by residents to commute to work and school and to access the community facilities (Plate 4.7). So, reasons for the low response from residents for principle 3 may be attributed to the fact, that although respondents believed vacant space did affect crime and created a fear of victimisation, one must bear in mind that these spaces also serve communities. By applying principle 1, 2 and 4 vacant spaces can be made safer (Table 4.8).

As discussed under the principle of target hardening (Chapter two), closing off these spaces will disrupt the flow and mobility of residents. Alternative options would be to clean the space, add lighting and encourage residents to avoid using the space at night.

Plate 4.8 shows that the Wentworth community is situated in the periphery of major petrochemical industries and a large and expanding industrial area (Jacobs). This juxtaposition is a safety and security concern and crime is exacerbated by the proximity of industry and the community. Sometimes, residential homes are found directly behind industrial complexes and derelict back roads.

Plate 4.7: Pathways between residential homes in Wentworth



The overlap between the community and industry also serves as access and escape routes for criminals due to the maze of darkened alleyways. It is also aesthetically unpleasing for residents. This was reinforced by interviewees stating that:

The situation of the community on the periphery of an industrial area hampers safety as the industrial area has a lot of dark alleyways and back roads that allowed criminals to escape

(Leverton, Interview, 2012) and,

Industry results in pollution, which leads to grime and decay, and this leads to areas that become dilapidated and sometimes disused when they close down. Then you find that shebeens pop up around industry for the workers who drink, these areas start to encourage crime and negative behaviour

(Govender, Interview, 2012).

Plate 4.8: Juxtaposition of the Wentworth community with heavy industry



iv) Principle 4 – surveillance and visibility

More respondents believed that principle 4 influenced fear rather than crime (Table 4.8). There are two types of surveillance. First, active surveillance refers to the usage of CCTV systems, which are beneficial when used in high-crime areas. Although the eThekweni Municipality has advocated the use of CCTV, it emphasised that it is only one way of addressing crime. Although respondents positively endorsed the use of CCTV, it is more likely that such systems would be implemented and used in the central business districts to monitor traffic violations and street crime (Minnar, 2007). An example of such usage was the Dalton Hostel Regeneration project. Local businesses and commuters around the area were concerned about the escalating crime and violence. The Municipality in partnership with stakeholders implemented aspects of CPTED including CCTV systems in Dalton Hostel. Paradoxically, though the system was not activated, crime dropped. A reason for this drop may be that the system *"acts has a*

deterrent because criminals will know that they are being monitored" (Govender, Interview, 2013). In addition, business investment increased:

As planning started and businesses started getting involved (in the project) and there was interest, suddenly there was no land or buildings available in the area. So it did the confidence, suddenly Dunlop wanted to expand, and they wanted a piece of land across the road that belongs to us, the city, and we saw things happening. Land became sought after by businesses... just putting in CCTV and a couple of things; it has a ripple effect with a lot of things (Singh, Interview, 2013).

This serves as one indication of how surveillance and visibility of an area, either actively or passively, enhances safety. Evidently, using CCTV reduces crime because potential offenders assume they are monitored and alter their actions because *"it is improbable that a criminal act will be not occur in a place that is deemed safe and secure"* (Perry *et al.*, 2006: 5).

However, since CCTV may not be an adequate option for the community, the next intervention would be to address the lack of lighting in the area, and the cutting and clearing of overgrown foliage.

Overgrown bush that conceals pathways behind or around buildings or property serve as access and escape routes for offenders (Plate 4.4). This was highlighted by residents of the Bluff (area next to Wentworth). Residents complained of vagrancy and lack of safety around the local beaches. Overgrown foliage on the beach concealed criminals and allowed them to escape after committing crime. Residents suggested clearing bush the, destroying pathways and increasing lighting and police patrols to remove criminal elements (Councillors Breakfast Briefing, 2012).

Plate 4.9: Limited lighting on road and none between flats in Wentworth



The heightened sense of fear may be from the limited lighting in the community, *"some areas definitely need more lighting, especially in the areas where there's lots of flats, between the flat, it's dingy and dark and could prove dangerous"* (Leverton, Interview, 2011).

Lack of adequate lighting is also a problem in Wentworth community. Plate 4.9 illustrates a road with more than twelve blocks of flats, yet lighting is only found on one side of the road. Only three street lights serviced the road, with no lighting present between flats.

v) Principle 5 – territoriality

Respondents agreed that the attitude of community members and how they responded to crime influenced criminal behaviour and victimisation. Lack of engagement by

residents in crime prevention within their communities, creates the impression that no one cares. Criminals are aware of communities, who have vested interest and those who don't. When community members are attached to their spaces, they strive to protect it. Communities must play a role in safeguarding their spaces and take ownership over them (Lieberman and Coulson, 2004). This in turn would produce greater community participation and engagement in proactively reducing crimes. The ability and willingness of a community to take ownership over their environments and lives is vital to crime prevention:

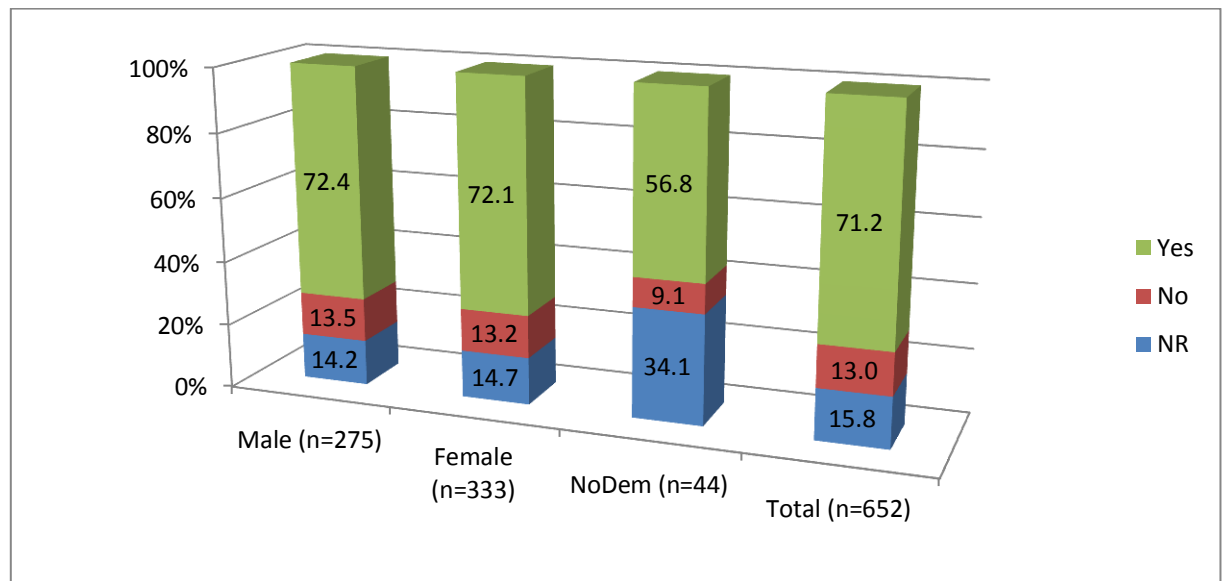
When you identify an area where the environment is one of the causal factors of crime then you start to address the environmental issues, whether it's a bad building or pollution, or overgrown bush or verge, then once you start making the area safer; the people start to feel safer. When people start to feel safer then they start to take ownership and then, any type of criminal activity taking place is going to be reported. Because nobody is going to come into an environment that's safe, where people have taken ownership. So, nobody is going to infiltrate that area

(Pillaye, Interview, 2013).

However, the management of the physical environment will also determine the level of territoriality that exists in a community. Figure 4.15 illustrates that respondents (71.2%) believed that the physical management of the environment influenced community/social development. This was apparent from photographic evidence of the Wentworth community that illustrates the problems relating to crime and planning and design.

Using all or a combination of the different CPTED principles to uplift the quality of the environment will reduce crime and will influence and increase in the territoriality of residents.

Figure 4.15: Effect of poor management of physical environment on social/community development in Wentworth



To summarise, the analysis of Table 4.8 indicates that there are various planning and design problems in the Wentworth community that influence fear of (and) crime. This analysis also demonstrated that the problems experienced in Wentworth are similar to problems that the CPTED principles aim to address in term of planning and design and crime. For instance, (i) dumping can decrease the image and aesthetics of an area. Dumping occurs due to an overall lack of maintenance. This further exacerbates the unaesthetic appearance of the area. On the other hand (ii) bush, coupled with limited adequate lighting in or around unfenced spaces or properties influences vulnerability. These planning and design problems can occur in a multitude of combinations. The significance of using CPTED is that the model is site specific, and can address many of these problems.

As illustrated by photographic evidence of Wentworth, each of the CPTED principles can be used to modify the environment and address the existing planning and design problems. The assumption is that, by applying the model to the environment crime and vulnerability will decrease.

The maps of Wentworth (Figure 4.13 and 4.14), photographic evidence and responses from residents (Figure 4.15), indicate that the management of the physical environment affects development. The responses from residents indicated that inadequate planning

and design, and the subsequent neglect of areas influence an increase in crime and victimisation. Notably, criminal activities were more prevalent in areas experiencing planning and design problems. Against this background, the researcher assessed support of the various CPTED principles by the community and the role of government in implementing the model.

4.6 ASSESSING THE PRACTICALITY AND FEASIBILITY OF CPTED

4.6.1 Community support of CPTED

The above section (4.5) suggested that poor planning and design can influence crime. It also showed that from a practical point CPTED seems the viable option for improving the physical and built environment in order to increase safety. However, the sustainability of the model depends on the buy-in from the community. CPTED aims to reduce crime via improvements to the planning and design of the environment, while also enhancing social inclusion and the responsibility of individuals to care for their environments. The use of the five principles aims to enhance existing initiatives while maximising the self-policing potential of the community (Cozens, 2007). Crime prevention relies on not just the ability of government to address crime, but for communities to be actively engaged and participate in such initiatives (Edwards and Zambuko, 2007).

Table 4.9 showed that the community positively supported (+80%) the utilisation of the CPTED principles to reduce crime and improve quality of life. Although responses for carrying out CPTED were positive, residents were still unsure about how the model could reduce crime.

Respondents agreed (Table 4.9) that target hardening; surveillance and visibility, closing off access and escape routes, and increasing territoriality would positively aid crime reduction. The positive responses for the use of these principles could be attributed to the other principles being closely related to traditional crime prevention approaches, such as visible policing, neighbourhood watch groups, monitoring and social crime prevention.

Table 4.9: Feasibility of specific CPTED principles to assist in crime prevention in Wentworth

CPTED Principles relating to survey questions	Category of planning and design issues	Yes	No	NR
Principle 1 - Target hardening	Target hardening	83.0	14.3	2.8
Principle 2 – Image and aesthetics	Improving the image of the community	71.2	26.1	2.8
Principle 3 – Access and Escape routes & (Principle 2 – Image and aesthetics)	Uplifting neglected/dilapidated buildings and spaces	80.5	15.6	3.8
Principle 4 – Surveillance and Visibility & (Principle 1 - Target hardening)	Using CCTV	81.4	16.4	2.1
Principle 5 – Territoriality	Passively watching over community	82.8	14.6	2.6

Respondents understood that uplifting environments would improve quality of life. However, they did not see the greening of space or changes in the physical and built environment as having a direct impact on crime, querying for example, *"how will trees and plants create a difference to crime?"* (Question from Respondents, 2012). Thus, the image and aesthetic principle received a slightly lowered positive response (71.2%).

Although respondents did not fully understand the model, they did acknowledge that changing the physical environment could reduce crime. This was evident in the community's support (Figure 4.16) for the use of CPTED (86.2%), with respondents indicating that better management of the physical environment would influence CP²⁸ (69.8%), and the model was a possible CP option (81.0%). These responses illustrate an overall buy-in from the community. The researcher presented these findings to interviewees and questioned them about whether they thought the community was ready to engage with prevention initiatives using CPTED. Opposing views were recorded, with Leverton (Interview, 2012) and Govender (Interview, 2012) agreeing, that the community was not ready to assume responsibility for a programme that incorporates CPTED:

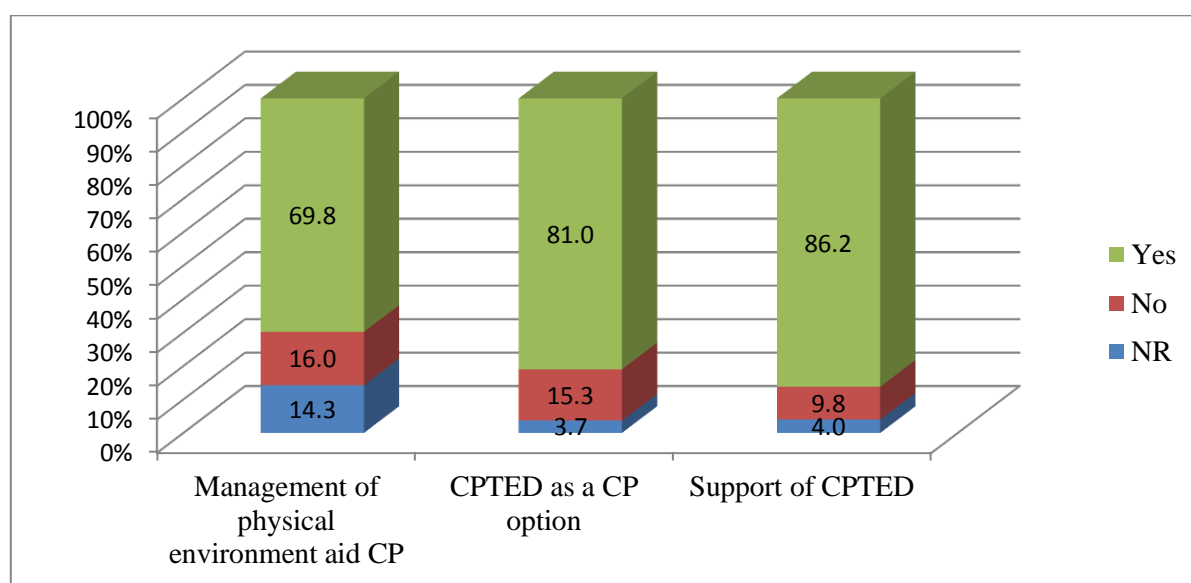
Yes I do believed that CPTED can aid in crime reduction, but no the community is not ready for a model such as this". On questioning why he considered this he

²⁸ For the purpose of this study, crime prevention is abbreviated as 'CP' for easy use and readability on figures.

added, “in order for them to take possession of the CPTED model there needs to be a change in community attitude, people need to get involved (Leverton, Interview 2012) and,

If you want community to own spaces and facilities it will deteriorate. There needs to be external bodies in place to maintain and oversee the maintenance of spaces and facilities (Govender, Interview, 2012).

Figure 4.16: Support for CPTED as an aid in crime prevention and management of the physical environment in Wentworth



Contrary to this, Singh (Interview, 2013) and Pillaye (Interview, 2013) felt the community would participate in CPTED initiatives. Pillaye (Interview, 2013) argued that communities are ready to engage in crime prevention that used CPTED. In keeping with the model, community participation is fundamental to address crime. Problems, programmes and subsequent solutions must be identified by the community and implemented in partnership with them because they (the community):

Are the ones who say this is unsafe for us. They are the ones that who are actually the driving force behind the projects. We (government) just push and support them to ensure the project gets off the ground. So, in no way do they feel left out, or feel that the work is done, and now they can take it over (Pillaye, Interview, 2013).

4.6.2 The role of government in crime prevention and implementing CPTED

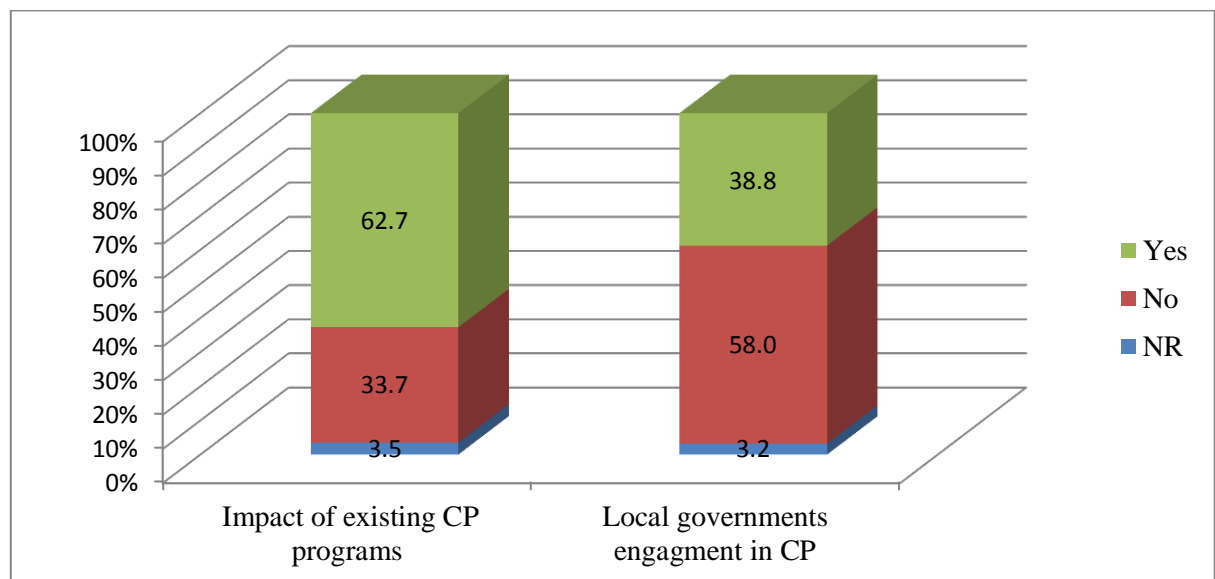
However, within Wentworth, the support for and from government is perceived as negligible and lacklustre

Government is doing practically nothing to help our communities, there are all sorts of promises that have been made, and nothing has been done. Nothing is concrete nothing has materialise

(Leverton, Interview, 2013).

This is evident from Figure 4.17 showing that respondents believed existing CP programmes were reducing crime (62.7%). Nevertheless, more than half (58.0%) felt that government was not doing enough.

Figure 4.17: Role of government in (and impact of existing) crime prevention programmes



Conversely, officials indicated they were actively engaging in crime prevention and sometimes used CPTED principles in that process. Pillaye (Interview, 2013) also indicated that Safer Cities was tasked with conducting ward safety profiles. These programmes bring together key stakeholders and community members to identify areas with planning and design problems that contribute to crime.

Both Singh (Interview, 2013) and Govender (Interview, 2013) argued that the SDB ABM office carried out and continues to engage with crime prevention and awareness projects. The SDB ABM operates two divisions: first, municipal service delivery and second, the development divisions. The unit carries out various tasks, which address infrastructure and development and social growth through service delivery. The overlap between planning and design and crime has become apparent in the SDB. Singh (Interview, 2013) says the built environment affects crime; merely addressing the social aspects of crime will result in a deficit in the physical environment. Using parks as an example, she states that they (parks) are *"a form of social infrastructure that the community use's and it is a place where drug addicts...hang out so one needs to look at the design of parks so as to inhibit this behaviour"* (Singh, Interview, 2013).

Singh (Interview, 2013) indicated that the office, undertakes clean-up blitzes aimed at clearing sites where dumping occurs and making areas aesthetically pleasing and reducing the opportunity for crime *"where there is dumping it does tend to attract crimes and negative behaviour"* (Singh, Interview, 2013).

The SDB ABM office also initiated regeneration projects aimed at uplifting previously dilapidated areas. One such project undertaken in partnership with architects and town planners, was the revitalisation of the Bulwer Park in Umbilo. Principles of CPTED were used to reduce crime while making the park user friendly and aesthetically pleasing. Although the project had positive outcomes and reduced negative behaviour, long term maintenance became a problem. Once the project was over, it was the responsibility of other line departments such as Parks and Recreation to ensure the continual upkeep and maintenance of the area, together with routine police patrols to reduce crime and vandalism. However, this did not happen. Singh (Interview, 2013) states that after the project, the office received complaints about the park, but there was little she could do but report it to the relevant departments in charge. *"Parks department will tell you, and they are the custodians of parks, listen we come, and we cut the grass, and we trim the trees and we put a few plants and we got no money to do that to"* (Singh Interview, 2013).

So, although the model is feasible as a CP aid, merely improving fencing and infrastructure is a short term answer if it is not upheld. Lack of care and oversight would ultimately result in criminal activity and negative behaviour resurfacing.

Prevention may be indirectly taking place; policing, for example, is a direct way of experiencing and knowing that something is physically happening. However, other programmes like social projects, while affecting crime rates, take a while before results are evident. On the other hand, tangible changes to the physical environment, using CPTED, can create direct reductions in crime. However, the case studies discussed in Chapter two, illustrating the implementation of CPTED in SA (Kruger, 2005b; Kruger *et al.*, 2006; Zambuko and Edwards, 2007; Claremont KwaDabeka Township Regeneration Projection, 2010) demonstrate that practitioners are aware of the benefits of CPTED. However, while the model is being applied to urban renewal and regeneration projects, it is being done with little understanding or acknowledgement of its full potential.

There is no evidence that local authorities grasp the implications of crime prevention through environmental design as a strategy for building better environments and, through this, improving the quality of life (Edward and Zumbuko, 2007:14).

All the officials interviewed believed that while the implementation and practice of CPTED is limited, its understanding and practical uses are slowly gaining momentum within government circles. Officials also indicated that professionals can be overly technical when dealing with communities. Engineers, town planners and architects do not think laterally and do not incorporate social aspects in their work. These statements are important for using CPTED because it falls within a planning and design, and social development spheres.

Similarly, Pillaye (Interview, 2013) points to the lack of communication and collaboration between stakeholders, thus hindering learning, understanding and implementation of the model. Concerning government, she states that departments are, *"working in silos. There was no consultation with other departments; usually a department will have a one track mandate"* (Pillaye, Interview, 2012).

Officials suggested ways of overcoming these problems stating that, "*education and awareness about the model because I do not think that a lot of people know that this model exists*" (Govender, Interview, 2013).

Local government needs to make provision or allocation of where the concept of CPTED is being spread, and people need to start knowing about it in whatever work they doing. Whether it's housing or roads, they need to have that community safety concept in mind in whatever they are doing

(Pillaye, Interview, 2013) and,

It (the term CPTED) needs to be demystified. It sounds too complicated and too technical so departments may be or have been using the model but do not realize that it is CPTED. So when you refer to it by its name they would say oh they bringing a new thing here for us

(Singh, Interview, 2013).

Singh (Interview, 2013) touches on an important aspect of the model saying that because it centres on crime, it draws attention away from the other potentially positive impacts of utilising the model. This is particularly significant, because the model focuses primarily on crime losing its impact because the primary responsibility to reduce crime would originate with town planners. They possess the ability to alter the built environment to foster social and development projects. For example, Singh (Interview, 2013) states that:

The practitioners on the ground, our architects, parks(department) managers who don't understand the aspect of CPTED and separate too harshly from the work that they do and say, let's leave it for someone else.

Although there are limitations and critiques of the CPTED model, officials supported implementing it in Wentworth. The model can work alongside other social crime prevention programmes, and it also reduces and prevents crime in order to uplift the quality of life of residents, "*if quality of life increases then yes crime will drop. It will be a gradual drop but it would drop*" (Govender A, Interview, 2013).

4.7 CONCLUSION

In keeping with the objectives of this study, five key issues emerged from the analysis of the data. First, the Wentworth community is experiencing high incidences of crime and victimisation. The community's perception of the prevalence and fear of crime is in keeping with what is taking place and represented by local crime data. This indicates that residents are in a vulnerable position, with safety as a key concern for social interaction and community development.

Planning and design had a significant impact on crime and victimisation. The previous apartheid planning and design of Wentworth hinders the social and spatial growth and development of the community. This was illustrated by the maps, which showed that areas experiencing planning and design problems, also had elevated incidents of criminal activity. Evidence of this was noted in areas situated close to the industrial area that borders the community, open spaces and provincial flats.

Residents of Wentworth believed that current crime prevention programmes were addressing safety concerns in the community. Nevertheless, they were not satisfied with the government's overall response to the crime situation. In line with this, respondents agreed that planning and design and management of physical spaces could reduce crime. Residents also supported the use of the CPTED model as an alternative crime prevention option for the community.

Local government is tasked with addressing crime and implementing alternative and innovative programmes. While there has been a shift in government regarding increased awareness of CPTED, there are still various departments that need to recognise its use in their everyday work. Interestingly, the data also revealed that although CPTED was not used primarily in crime prevention, practitioners were using the principles in basic service delivery initiatives. So, while projects/initiatives do use some aspects of the model, the lack of knowledge, communication, partnership between departments and understanding, limit its usage.

Lastly, government officials indicated that using CPTED poses a conundrum for practitioners, because it falls between the spheres of community/social development,

crime prevention and town planning. Coupled with its scientific terminology, the CPTED model has been perceived as something that belongs in 'someone else's' department. This has prevented practitioners and officials from understanding its varying potential and application within and beyond crime prevention.

CHAPTER FIVE: EVALUATION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter provides a synopsis of the key findings of this study and an evaluation in terms of the literature and the broader conceptual framework. The theoretical and contextual literature pertaining to the use of the crime prevention through environmental design model (CPTED) in South Africa (SA) is still relatively new and developing. By drawing on international case studies and some South African guidelines pertaining to CPTED, this study set out to explore the influence of the planning and design of the environment on crime and vulnerability in the Wentworth community. It also sought to determine whether the CPTED model could serve as a feasible crime prevention approach for addressing these concerns.

CPTED draws from the work of various theorists and integrates the guidelines of defensible space (Newman, 1996), incivilities (Kelling and Wilson, 1982), behaviour and environment (Shaw and McKay, 1942) and natural surveillance and security principles (Clark, 1999). The condition of the physical environment can result in negative behaviour; therefore CPTED modifies the environment to make spaces less attractive for criminality (Sutton *et al.*, 2008). Hence, it goes beyond defensible space in the residential context and addresses crime prevention in the social and physical environment (Coetzer, 2000; Casteels and Peek-Asa 2000; Coetzer, 2003). Generally, the implementation of CPTED addresses specific forms of opportunistic crimes such as burglary, theft, and hijacking, but has a broader applicability to addressing social and physical factors, which influence the fear of crime. CPTED is multifaceted and can be applied in many communities, from residential property, business sites, shopping complexes and schools (Lens, 2013; Schneider *et al.*, 2000).

This chapter is divided into five sections. Section 5.2 provides an overview of the key findings as related the objectives of this study. Sections 5.3 to 5.6 expand the discussion of each objective and subsequent findings within the context of the theoretical and conceptual

framework of this study. Section 5.7 suggests some recommendations for using CPTED in Wentworth. Lastly, section 5.8 presents a conclusion to this study.

5.2 SUMMARY OF KEY FINDINGS IN CONEXT OF THE FOUR OJECTIVES OF THIS STUDY

i) Influence of planning and design on crime

The maps (Figure 4.13 and 4.14) of Wentworth geospatially showed a significant relationship between planning, design and crime. Crime was systematically found in areas with deteriorated environments. The areas that demonstrate the majority of these problems tend to be provincial housing units/flats and open spaces.

Most fear and crime experienced by residents relate to contact crimes in Wentworth, with a gendered trend of more male to female victimisation. Also, crime and the overall poor management of the physical and built environment have negatively impacted on social relationships, feelings of safety and community cohesion.

ii) Effect of apartheid planning and design in the management of urban space

Apartheid planning and design has negatively influenced crime and vulnerability in the Wentworth community. The community is situated near major industry and transport routes that negatively hinder quality of life and safety. Poor management of the urban environment has increased physical disorder and decay.

iii) Feasibility of the CPTED model for crime prevention in the Wentworth

Residents in Wentworth supported the use of an alternative approach like CPTED for addressing crime and to create more liveable environments. They positively rated the principles of the model and there was more support for tougher measures (of CPTED) such

as target hardening and closing-off certain areas, considered to be access and escape routes for criminals.

iv) The role of local government in crime prevention

Communities believe that local government is not doing enough to address crime and victimisation within Wentworth. Various policies and strategies indicate that local government is responsible for implementing models like CPTED. However the limited lack of understanding by policymakers and officials, coupled with little practical experience has impeded the use of the model. There is no clear policy directive of what CPTED entails or who should be responsible for its implementation within communities.

Numerous challenges have hindered the implementation of CPTED as a primary crime prevention approach, yet, it was interesting to find that the model was unknowingly incorporated into service delivery, urban renewal and regeneration projects by government.

5.3 CRIME AND VULNERABILITY IN WENTWORTH

5.3.1 The nature and extent of crime and victimisation

Muggah (2012) argues that urban violence is generally found in cities. In the context of SA, unemployment levels of up to forty percent have contributed to increasing crime and victimisation within the major cities. Although the country is democratically stable and conflict free, a concern is not just the high crime rates, but the amount of serious and violent crimes. Comparative examinations of global statistics show that crime in SA is higher than Europe or the USA. More disturbing is that SA's crime rates are similar to other African countries experiencing civil war (International statistics, www.crimestatsa.com).

Christens and Speers (2005) indicate that violent crime is influenced not only by individual characteristics but by population density. For example, high densities can mask minor crimes like pick-pocketing and petty crime (Cozens *et al.*, 2005). The population density of

the Wentworth community is very close to reaching its carrying capacity (because of apartheid planning and design). Some interviewees stated that people live too close to each other, houses are too small for extended families, and that there is simply not enough space for the community to expand. In addition, the growth of the industrial areas (next to the community) and the subsequent proposed development of the Back of Port, poses concerns for safety as the rapid industrialisation may create more criminogenic spaces.

Population density and crime is also tied to the growth of cities. It erodes the social fabric of communities, lowers opportunities and results in communities being caught in a cycle of violence, poverty and inequality (Muggah, 2012). A causal factor for this pattern can be attributed to the rapid growth of urban centres:

The speed and scale of global urbanization - and its association with extreme forms of poverty and violence - may at times seem overwhelming. Over half the world's population lives in cities, and in the next fifty years the proportion will increase to two-thirds. Whereas in 1950 there were 80 cities with populations exceeding one million, today there are 480

(Muggah, 2012: 4).

Residents in Wentworth were well aware of the nature and extent of crime. Their 'perception' of crime was not far from what is actually occurring and officially captured. Interestingly, females feared victimisation, yet more males were actually victimised. A key finding of this study was that contact (opportunistic) crimes were most common. This is negative yet albeit positive for the implementation of CPTED, as it aims to primarily address these types of crimes. For instance, Casteel and Peek-Asa (2000) examined the use of CPTED in addressing business robbery. Their study showed that although CPTED may not apply to all businesses; it was effective in reducing robberies. Although they could not determine whether a specific principle of the model would reduce robbery, they did find that a combination of principles was beneficial.

Changing the social characteristics of cities requires long-term sustainable initiatives that alter the mind-set of people, their behaviour and attitude. On the other hand, influencing

changes in crime patterns through modifying the built environment may create short-term responses to reducing crime.

5.3.2 Fear, social cohesion and disorder

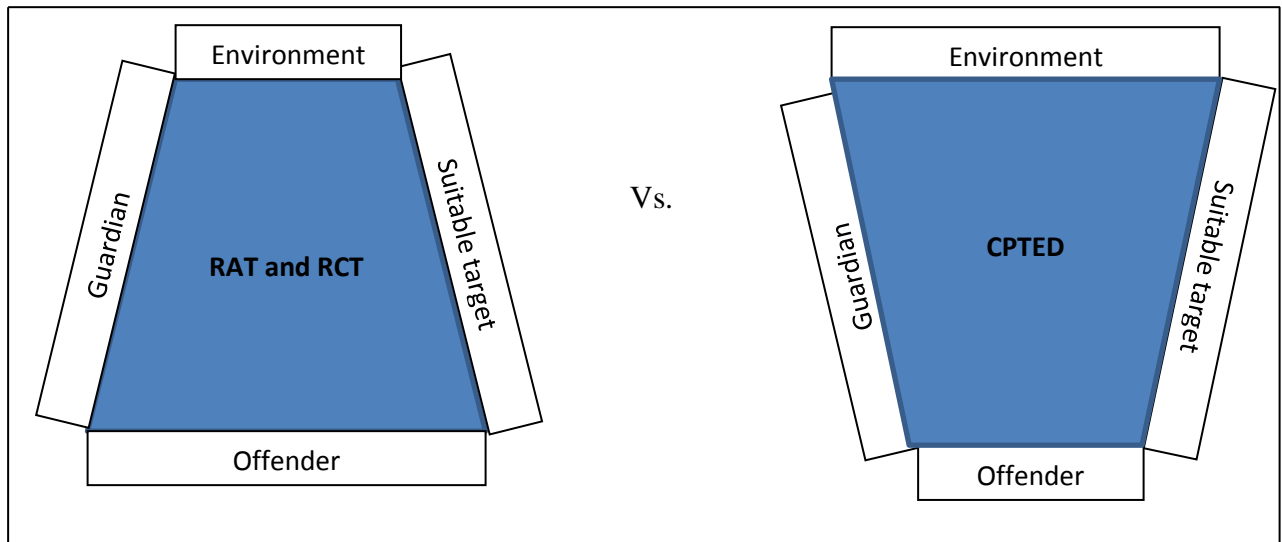
This study found that respondent's feelings of actual and perceived safety shape the way people use and interact in space through time. These beliefs also influence the everyday activities of the lives of individuals. Criminological theorising uses two situational crime prevention approaches to explain this phenomenon. First, routine activities theory (RAT), which focuses on the potential victim and how ones everyday routine activities make them easy crime targets. Second, rational choice theory (RCT), examines the choices of offenders in weighing the loss against the rewards of carrying out crime (Newburn, 2009). RCT depends on both RAT and crime prone environments.

For example, Figure 5.1 compares RAT and RCT to CPTED. For crime to occur in the RAT and RCT scenario there needs to be a suitable target, lack of a guardian, an offender and environmental conditions that are conducive to crime. In the RAT/RCT scenario, the base of the pentagram, representing the offender is larger than its height. The environmental aspect, occupies a smaller space, thus making crime possible. While there are many social and biological interventions or arguments for reducing crime, the CPTED model approaches crime prevention from an intervention and planning perspective. It aims to reduce the opportunity for crime by directly modifying the physical environment to increase safety. Thus, in the CPTED scenario, the base of the pentagram (the offender) has been reduced, while the environment, at the top, increased to reduce offending. Erdogan (2010) refers to this as the ecology of crime, where crime analysis aims to understand the social (RCT/RAT) and physical (CPTED) characteristics that motivate crime.

In the context of Wentworth, the RAT and RCT pentagram would apply to the community. The deterioration of the physical environment influences the routine activities of residents and the rational choice theory of offenders. Conversely, using the CPTED pentagram to

improve the environment will effectively reduce and prevent certain crimes and decrease vulnerability.

Figure 5.1: RAT and RCT vs. CPTED



The World Report on Violence and Health (2002) discusses the influence of crime and victimisation on social integration and investment. The report cites studies from across five poor communities in Jamaica and suggests that violence results in the following:

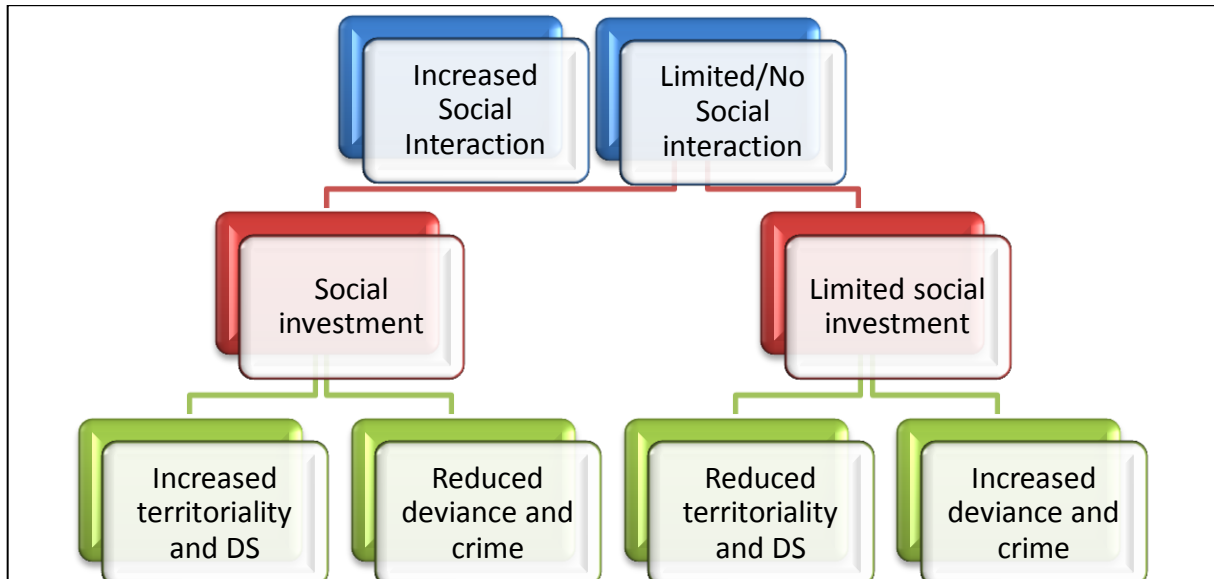
Physical mobility in the particular locality was restricted; employment and educational opportunities were reduced; businesses were reluctant to invest in the areas, and local people were less likely to build new homes or repair or improve existing property. The reduction in social capital – the increased mistrust resulting from the destruction of infrastructure, amenities and opportunities – increased the likelihood of violent behaviour...

(World Report on Violence and Health, 2002: 36)

The findings from the Report reflect that increased social integration/interaction can influence positive changes in crime (Figure 5.2). Wentworth residents believed poor management of the physical environment hindered social/community development. However, improving social interaction among residents will increase community investment, territoriality and thus, reduce crime.

The Report (2002) also refers to the influence of infrastructure, public amenities and management of the physical environment on social investment and interaction. Community interaction depends upon the existence of social and physical infrastructure. The lack of either stunts the ability to improve the quality of life of residents, hinders community investment and hinders crime prevention. Wentworth lacks recreational physical infrastructure, such as parks and maintained open spaces. These limit residents' ability to engage in their community, thus seeking facilities outside. This also negatively influences social interaction and causes residents to lose confidence in participating in initiatives within their communities.

Figure 5.2: Social Cohesion - Increased vs. Limited Social Interaction on Crime



Social cohesion is vital to CPTED. For example, the principle of territoriality endorses the participation of residents in taking ownership over their immediate environments and actively engaging to protect it (Kruger et al., 2006). Muggah (2012) suggests that disorder and cohesion are inherently linked to fear and crime. As, proposed by the broken windows theory (Kelling and Wilson, 1982), a sense of community is defined through social cohesion, and emotional attachment to place. The absence of social cohesion heightens incivilities and fear. For example, Lemanski (2006) found that beyond the influence of the physical environment, increased fear of crime was associated with the movement of black

residents into former white only communities in Cape Town. The changing social composition of the communities increased perceived sense of risk and fear. Schweitzer *et al.* (1999) contends that social cohesion is vital to controlling disorder, stating that communities with the most social cohesion have the least fear of crime.

Notably, social cohesion and disorder also depends on the built environment. Petherick (2000) using Shaw and McKay's (1942) study of delinquency and crime within cities as an example, suggests that behaviour is linked to the environment. He explains that poor conditions and the quality of the physical environment influences criminal activity. Therefore, people will report heightened fear of contact crime when they are in such environments (Pain, 2000). This indicates that the environment provides cues on how spaces should be perceived and "*dark, lonely unattractive or uncared for spaces*" increase fear and perceptions of vulnerability (Pain, 2000: 369). As expressed by residents of Wentworth, some environments can make one feel secure, while decaying spaces, buildings and general neglect allow crime to thrive, heightening fears (Kruger, 2005a; Austin *et al.*, 2002; Lemanski, 2004). These conditions create perceptions of vulnerability even when a threat does not exist (Kruger, 2005a; Beall and Fox, 2009). Neighbourhood conditions also act as preconditioned signals of social cohesion and attachment to space.

In SA, the poor conditions of communities that influence crime can be attributed to apartheid planning and design and poor service delivery.

5.4 INFLUENCE OF APARTHEID PLANNING AND DESIGN IN WENTWORTH

Apartheid planning and design has left scars on the urban landscape. The forced removal of people to marginalised townships, like Wentworth, with little or no access to basic services resulted in deteriorated and impoverished communities. The challenges faced by the community of Wentworth are not uncommon among other townships.

Breetzke (2008) argues that townships have become symbols of crime, with residents predisposed to criminality, because of marginalisation:

Townships have become spatial symbols of crime whose ecological character and conditions, to some extent, pre-determine criminal behaviour and reinforce criminogenic stigmas and attitudes in residents. The notion that a geographical area can be the determining influence of crime and delinquency has its roots in the ecological tradition in criminology

(Breetzke, 2008: 229).

Socio-spatial segregation of the Wentworth community created environments conducive to various socio-economic and crime problems that negatively affected the lives of residents. Breetzke (2008) contends that beyond actual crime, exposure to victimisation is caused by the inability of residents to move out of townships due to socio-economic deprivation. Hence, not only did apartheid policies create environments conducive to crime, but locked in Black residents in these areas without an opportunity to move, or improve their quality of life. The demographics of Wentworth show a combination of a largely young and elderly population. These groups, by virtue of their age and economic instability, cannot move away from the community and crime.

Chapter three presented an overview of the social and spatial characteristics of Wentworth, suggesting that the socio-economic circumstances of residents result in them being caught in a cycle of deprivation and crime. The characteristics of this disadvantaged situation are similar to those outlined by Landman and Ntombela (2006) in their study of urban form and the poor. They suggest that the majority of the urban poor tend to be elderly, disabled, disadvantaged, ill or those on social support from government. As a result of economic deprivation these groups cannot change their circumstances. Lack of income restricts access to education and results in most children dropping out of school, thus furthering their disadvantage. Urban land markets make accessibility of good housing, in improved locations, unattainable.

In Wentworth, the residents have been locked into occupying low cost housing in poor surroundings. This was particularly evident in the deterioration of provincial flats. The socio-spatial problems surrounding these developments form a common thread throughout

the findings. The exterior of these buildings and subsequent maintenance pose a security risk for its occupants. In this regard they serve as a symbol of neglect and crime. However, the problems experienced with provincial housing in Wentworth are not uncommon across SA. The inaccessibility to adequate land is a result of increased urbanisation especially after 1994 (Landman and Ntombela, 2006).

In Wentworth, development initiatives to relocate residents from poor housing to new units, on Lansdowne Road, proved futile. Not only was there not enough land available to develop proper housing structures, but new buildings were not designed with crime prevention in mind. Also, the new units did little to improve the living conditions of residents in Wentworth, because criminal behaviour continued in the new surroundings. By drawing on the cultural transmission theory, Breetzke (2008) explains that criminal behaviour is the result of past socio-economic deprivation and high incidents of crime within townships. These criminogenic behaviours and attitudes are culturally transmitted from one generation to the next, and are further influenced by one's surroundings. In essence, the physical environment determines the behaviour of residents.

Also, this situation experienced in Wentworth is relevant to Jeffery's (1999) argument on defensible space vs. CPTED debate. Jeffery contends that architecture (planning and design) may assist in reducing some crime. However, criminality will continue if the actual behaviour of the offender is not changed using the environment. In other words, he suggests that planning and design must include mechanisms to modify behaviour. As discussed in Chapter Two, CPTED manipulates the environment and changes offending behaviour to reduce crime and associated perceptions.

Landman and Ntombela (2006) acknowledge that since the 1990s service delivery, particularly within Black and Coloured areas, has improved. Nevertheless, they contend that the legacy of apartheid is still evident in the built environment. Apartheid created fragmented, dispersed and marginalised communities and improving:

[Safer] urban design will contribute to the implementation of a more integrative urbanism, which in turn will be a more relevant urban design to promote greater access to land for all urban residents

(Landman and Ntombela, 2006: 23).

However, it is difficult to create inclusive spaces when the post-apartheid urban landscape has become exclusionary, in the form of gated communities, which represent new forms of spatial patterns (Landman and Ntombela, 2006). Studies of gated and fortified communities or places that advocate the prevention of crime through design, fail to consider less affluent, marginalised communities. Not only do these developments displace crime, but they are also beyond the reach of economically disadvantaged people. Transforming the physical and built environment of Wentworth to emulate the positive aspects (territoriality, safe environments, management of space and so on) of gated communities will be challenging, especially in light of poor service delivery and the existing planning and design of the community.

Chapter two provided a detailed discussion on restructuring the urban landscape to create inclusive, crime free environments for communities like Wentworth. Prosperous cities and communities are inclusive and promote productivity, infrastructure development, quality of life, environmental sustainability, equity and social inclusion (UNHABITAT, 2012). One way of achieving these goals in Wentworth would be to use the principles of CPTED because the model addresses an assortment of problems and not just crime (Zahm, 2007).

5.5 USING CPTED IN WENTWORTH

5.5.1 Planning, design and crime (and fear of it)

Mapping allows practitioners to identify the nature and extent of criminality within and outside hotspots. Understanding systematic or random patterns of crime is vital for geospatial mapping. Random concentrations of crime occur anywhere and do not depend on distinctive features. However, the systematic concentration of crime depends on distinct

features such as poor planning and design issues, social problems and so forth. Crime prevention in these hotspots reduce crime, because the features that cause vulnerability and victimisation can be removed or modified (Anselin *et al.*, 2000).

Geospatially mapping crime, and planning and design problems in Wentworth, was important to understand the causes and responses to crime and vulnerability. The map showed systematic patterns of crime around areas with distinct planning and design problems. Anselin *et al.* (2000) state that the analysis of the spatial distribution of crime suggests that crime hotspots are concentrated around certain land uses or population characteristics. These include areas with social disorder and deterioration, rundown commercial buildings, areas with poverty and communities composed of more female headed households (and a multitude of social problems). These characteristics of crime hotspots are very similar to those found in the Wentworth community.

In Wentworth criminogenic environments around provincial housing and open spaces, were highlighted as areas with the highest levels of crime and planning and design issues. For example, Overall *et al.* (2008) indicates that some areas may seem unpopulated, like vacant areas or open space. However, crime does take place in open and deserted spaces. Thus, crime mapping is able to pinpoint such areas for effective response. However, the authors caution that sometimes areas larger than one square kilometre of land are mapped. In these instances, crime incidents are diffused and may result in effective crime prevention or service delivery being reduced in that area. To counter this problem, they suggest relying on crime statistics to provide precinct reports of incidents within that square kilometre.

The analysis of residents' responses of crime, coupled with the map of Wentworth (Figure 4.13 and 4.14) and accompanying photographic evidence spatially and visually illustrated how crime was more predominant in areas that exhibited planning and design problems in the community. While this may indicate the implementation of the model in Wentworth is applicable, it was also important to assess the community's understanding and support of the model. The participation of residents in crime prevention within communities is vital to the sustainability of any programme. In terms of CPTED, the principle of territoriality

specifically advocates community involvement. Thus, the response from residents regarding the actual use of the varying CPTED principles was central to understanding the feasibility of using the CPTED within the community.

As previously mentioned the poor planning and design in Wentworth increases the potential for criminality and reduces residents' ability to have territorial control or use over their spaces (Pain, 2000). The notion that crime and physical factors cause fear indicates that modifying the physical, influences changes in the social environment (Loukaitou-Sideris *et al*, 2000). For instance, Austin *et al*. (2002) argues that adolescents living in neighbourhoods characterised by poor physical conditions tend to exhibit greater behavioural problems. Therefore, the physical form of the built environment plays an integral role in reducing crime and also controlling behaviour (Newman 1996). Newburn (2009) argues that in line with CPTED, subtle changes in neighbourhoods can increase surveillance and reduce fear of crime. For instance, he suggests that low traffic, areas lacking visibility, with limited intervention in the case of emergencies, makes people more vulnerable. Exacerbating these fears is the lack of social cohesion and community support.

Fear is often based on the real experiences of crime and victimisation (Lupton and Tulloch, 1999). A study by Ditton and Chadee (2006) revealed that victims of crime had increased feelings of future victimisation, this resulted in people perceiving crime to be higher than it actually was in reality. Beyond the role of crime statistics, the analysis of victimisation provides insight into the prevalence of certain offenses. Understanding fear is just as important as understanding crime levels. Frank (2003) argues that perceptions of crime (and the way government responds to it), determines people's behaviour. For example, an examination of the levels of crime within the Merewent area indicates that while crime had decreased, residents' still perceived crime has problematic. This resulted in fear of crime being higher than its prevalence (UrbanEcon, 2006).

In addition, Frank's (2003) arguments are applicable to this study's findings of feelings of safety and social interaction, which revealed that a decreased sense of safety determined

people's behaviour (social interaction and relationships). Interestingly, feelings of safety are not always conditioned by actual criminal events.

5.5.2 Feasibility of CPTED principles for Wentworth

Chapter two presented a detailed discussion on the CPTED model and the problems that each of its principles aim to address. Even though this study presents evidence to support the use of CPTED, only certain features of the model can be used to some extent within the Wentworth community. The response from residents of Wentworth, and photographic evidence of the area indicates that crime hotspots were characterised by problems that relate to the CPTED principles. However, when CPTED is incorrectly used it can create social control rather than enhance safe movement through space.

For instance, this study highlighted the excessive use of the principle of target hardening (walls, fences, gates and so forth). Even though using this principle of CPTED will certainly reduce crime, practitioners must be careful to ensure that this measure enhances safety and does not control the movement of people. For example, setting up gates in dark alleyways, and closing off sports grounds will deter residents from using these spaces at night thereby force their own victimisation. On the other hand, permanently closing off areas, restricts movement through space and disconnects residents from their sense of place.

In light of this, it is important to ascertain the principles of CPTED that can be successfully used in the community to enhance safety, and these include:

i) Image and aesthetics

Access to quality public spaces in neighbourhoods creates a sense of place for residents (Landman and Ntombela, 2006). Wentworth has many open 'green' spaces. However, much of this is shrouded in overgrown bush, unkempt foliage and leads into vacant dark spaces. Residents understood that crime would be reduced by changing the environment using the model. Although residents positively rated the CPTED principles, they did not entirely

believe that image and aesthetics (specifically greening of space) could reduce crime. However, the poor condition of infrastructure in open spaces and parks are associated with drug and alcohol abuse, and places where criminals hid (Perry *et al.*, 2006). Therefore, the deterioration of the physical and built environment heightens fear and perceptions of crime. Subsequently, the activities in these spaces can be changed by 'greening the area' and increasing public use, which in effect would reduce crime.

Perry *et al.* (2006) suggest that green spaces, such as parks increase positive perceptions of crime and reduce fear. Similarly, Kuo and Sullivan (2001) found that green spaces lowered fear, incivilities and violent and aggressive behaviour. They also analysed local crime reports which showed lower crime rates in 'green' locations. Both studies indicate that improving the image and aesthetics of spaces influences both perceptions and actual crime. However, according to CPTED, vegetation can also induce vulnerability, for example bush and open space. Therefore, while green spaces reduce crime, the long term management of such zones determine whether they become derelict and induce criminal activity (Perry *et al.*, 2006).

ii) Access and escape routes

Chapter two presented various studies regarding the development of cities and their impact on crime and safety. The Wentworth community was juxtaposed with heavy commercial and chemical industry. This was particularly important for understanding the spatiality of crime, as the proximity of these areas was a concern for safety. Jacobs (1961), for example, highlighted that rapid industrial growth, posed a security concern for residents. This may further prevent residents from intervening and assisting when a crime takes place. Also, the proximity of industry to the Wentworth community serves as access and escape routes for offenders. However, they also allow residents to commute to work and to access different zones of the community. Thus, closing off certain areas must be conducted in a manner that does not spatially reduce the mobility of residents.

iii) Surveillance and visibility

Wentworth has limited street lighting. This was particularly evident in-between provincial housing developments. The existing lighting was hampered by overgrown foliage. Pain (2000) argues that while many studies propose that brighter street lighting may reduce fear and increase safety, it may also make physical disorder visible and increase fear. Increasing lighting must be done together with changing the design of the built environment. For instance, changing the position of public amenities (toilets) and ATM's with improved lighting reduces feelings of vulnerability (Cordner, 2010). Wentworth is characterised by social and physical disorder; merely increasing lighting will draw more attention to these problems and negatively affect the image and perception of the community. Other strategies like improving the general image and aesthetics, closing off access to certain areas and improving surveillance and visibility may be required.

Although CCTV is beneficial, it is costly to install and monitor on an uninterrupted basis. For example, this study illustrated the use of CCTV in the Dalton Hostel Regeneration Project. Installing the system decreased crime because offenders thought they were 'watched'. Ironically, the system was not turned on to monitor criminal activity. This implies that while target hardening measures such as CCTV does assist crime prevention, monitoring these interventions is another issue that requires further research. In addition, as previously mentioned, these systems are more likely to be used in the CBD and commercial and/or industrial zones, as they are the economic centres of cities.

Practitioners tend to resort to target hardening using CCTV as a primary prevention tool. However, local authorities have expressed concern regarding its overuse, *"CCTV is only part of the solution and not the solution itself"* (Municipal Institute of Learning Dialogue Series, 2010: 2). Consideration must be given to the fact that CCTV does not exclude but enhances other forms of active surveillance such as visible policing, increased lighting and creating clear lines of vision by removing bush. Long-term responses would be increased passive surveillance by community members, and encouraging the reporting of crime.

An alternative to the constraints of using CCTV would be to increase informal (passive) surveillance. This entails encouraging residents to watch and protect their space. However, Cozens *et al.* (2005) contends that changing the built environment to increase informal surveillance and visibility, does not necessarily mean that people will report or intervene when a crime occurs. Increasing informal surveillance by residents may prove successful in Wentworth because beyond CPTED, social crime prevention projects also encourage active participation of residents in their collective community's safety. CPTED supports other crime prevention initiatives by enhancing and promoting the principle of territoriality. In this way residents are encouraged to participate in protecting themselves, their property and environments. Ultimately, enhancing planning and design through the CPTED principles would increase territoriality and defensible space, resulting in residents becoming 'CCTV cameras in themselves', and passively watching over their own environments. Instances of this surveillance, are neighbourhood watch groups, and patrols.

The principles of CPTED overlap and enhance each other. Beside strictly using CCTV and encouraging passive observation, using the other features of the model will improve visibility and surveillance. However, actually applying the model in Wentworth must be guided and supported by strong policy and implementation strategies. The persons responsible for initiating and managing the use of the model, must have a clear understanding of the negative and positive aspects of the model, to ensure it does more good than harm for the community.

5.6 THE ROLE OF GOVERNMENT IN CPTED IMPLEMENTATION

As shown by the international overview of the application of CPTED, a recurring question is who is; responsible for this implementation? An examination of various strategies by other countries point to local government, in partnership with stakeholders, as the primary implementers of the model. Chapter two outlined the role of government and the feasibility of the model from a theoretical, but limited practical perspective. If the theoretical application of the model cannot be translated into policy and practice, then criminologists,

community developers and town planners are ultimately failing. Local government has a significant role to play in crime prevention and uplifting the quality of life for all citizens.

However, this study found that while local government was responsible for implementing CPTED, there was little understanding of how this should occur and who should be responsible. CPTED was shuffled between crime prevention and town planning, with each set of practitioner's indicating that it was the responsibility of the other. Further exacerbating this confusion, was the disconnection in communication between departments and officials who were working in silos. However, an interesting finding from both the literature and the data is that the model first falls squarely within the duties of crime prevention practitioners. These individuals are aware of CPTED, yet, implementation to specifically address crime is somewhat lacking. Conversely, planners who have limited knowledge of the model are extensively applying the principles of CPTED in urban renewal and municipal service delivery initiatives. This clearly highlights a significant gap in communication and the practice (of CPTED) between departments and practitioners.

Shaw (1998) states crime is more rampant within urban cities and towns. Hence, the responsibility of local government to intervene and address these problems, is in keeping with international developments in crime prevention. The local governments' inability to initiate and sustain innovative ways of reducing crime, lowers public confidence, and results in practitioners continuously implementing the same programmes. Numerous policies developed at national and provincial levels, provide practitioners with the tools to implement programmes that reduce vulnerability. However, the location, nature and extent of crime vary from one area to the next (Shaw 1998). The inability of practitioners to interpret national directives and institute local initiatives, coupled with miscommunication and community resistance, may be the reason for the limited implementation of proactive responses to crime.

Subsequently, six years later, Berg and Shearing (2011) argue that crime prevention in SA has diminished. Policies like the NCPS and White Paper on Safety and Security (1998), which advocate the CPTED model, have lost their lustre. They reason that, practitioners are

opting for reactive, tougher short-term responses to crime, rather than long-term sustainable measures as outlined by policy and legislation. In this regard, government support is vital to ensuring communities engage in their own safety and social development. This study found that the community had a negative perception of government's role in crime prevention. Given the nature and extent of crime and victimisation in the community, residents were positive about trying different strategies (like CPTED) to address security concerns. Nevertheless, the reluctance by government to implement the model is based on lack of understanding and knowledge. This is evident in the reluctance to implement projects incorporating or based on the model (Berg and Shearing, 2011).

Interpreting national legislation at local level is not enough to ensure CPTED implementation. An international overview of the application of the model, shows that CPTED has been integrated with national policy and applied to specific policing and crime prevention initiatives by local government. This manner of implementing CPTED, is more effective than merely implementing broad national guidelines, which would have minimal impact, especially when practitioners have limited knowledge of the model.

The literature review and data analysis of this study showed that the use and understanding of CPTED have increased within SA. This is evident from the numerous initiatives being undertaken at local government level (Masuka and Maepa, 2003; Kruger, 2005b; Kruger *et al.*, 2006; Zambuko and Edwards, 2007; Claremont KwaDabeka Township Regeneration Projection, 2010). Newham (2005) states that local government has achieved more progress with crime prevention through environmental design, which has specifically involved CCTV, urban renewal and city improvement districts (CIDS) and visible policing. This is similar to the findings of the study that showed that while Wentworth residents positively supported the use of CPTED, they tended to rate target hardening and access control higher, as these are viewed as tougher strategies to prevent crime. These responses could be because of the fear of high levels of crime and victimisation and is a common response for most people (Landman and Liebermann, 2005).

Successfully implementing CPTED requires interdisciplinary and interagency support, and coordination in land use and the built environment decisions (Crowe and Zahm, 1994). The IDP, URS and SCS make provisions for these partnerships by advocating the convergence of all government departments and stakeholders, and their skills and resources, when addressing crime and development issues. They specifically emphasise that local government is tasked with enforcing safety and security plans in the city, and addressing crime prevention from a planning and design perspective. These policies bring together NGOs, NPOs and government to address crime and its prevention, by incorporating CPTED at the community level. These statements were true of ward safety profiling, carried out in the study area by the Safer Cities Unit, which also highlighted CPTED principles to reduce crime and grime (SDB CSF Minutes, 2011b). The profile incorporated partnerships with other local government departments, community organisations and residents. However, though the profiling showed that the physical environment influenced crime, very little was done by using CPTED to actually address these concerns.

Integrating CPTED into various social and infrastructural initiatives should be encouraged by creating partnerships between crime prevention co-ordinators and town planners at local government levels. These stakeholders can successfully integrate national, provincial and local guidelines to enhance crime prevention through planning and design on the ground (NCPC, CSIR, ISS, 2000). While crime prevention co-ordinators are responsible for applying the model, town planners are also central to this process. The CSIR Built Environment division appropriately details the roles of town planners by proposing that CPTED implementation should ideally incorporate spatial planning (urban planning approaches to promote mixed land use), design (detailed design of space) and management (management of the city and functions including maintenance and enforcement of municipal by laws) (Landman and Kruger, 2009).

A reason for this 'CPTED is not my problem' attitude by practitioners (outside the sphere of crime), as indicated by interviewees, was that the term CPTED came across as complicated and needed to be demystified. The model refers to crime prevention, yet uses a host of planning, design and environmental management initiatives to achieve security. For many

practitioners, the word crime denotes that, the responsibility lies with the police and units addressing safety and security, while environmental design would fall within the realm of planners. Furthermore, other departments responsible for municipal service such as the Department of Parks and Recreation, who are responsible for maintaining parks and open spaces, also feel that CPTED is not their domain. This attitude is detrimental to the sustainability of the model because the overall maintenance of environments after implementation of the principles, is vital to ensuring that spaces do not transgress into decay and deterioration.

5.7 RECOMMENDATIONS

In light of the findings of this study, the conceptual context and the challenges that exist in implementing CPTED in Wentworth (a community affected by apartheid planning and design) the following recommendations are suggested:

i) CPTED principles applicable to Wentworth

CPTED is site and location specific and implementing all principles of the model may not be feasible in the Wentworth community. Apartheid policies were designed to restrict and control the movement of people through space. Therefore, the use of target hardening to close-off space must be reviewed.

Considering the socio-spatial environment of the Wentworth community, this study suggests that the application of the following CPTED principles:

- Image and Aesthetics – maintenance of more green space, clean-up and removal of garbage.
- Surveillance and Visibility – increased and improved lighting, clearance of bushes, increased passive surveillance by residents, using wire fencing instead of walls.

- Access and Escape Routes – cautiously restrict access to certain public zones deemed unsafe at certain times, for example, closing of sports grounds at night.

The use of these principles would increase and enhance territoriality. Using these principles (as opposed to target hardening measures) would also reduce fear and perceptions of crime, and create inclusive, safer spaces for residents of the Wentworth community.

ii) Policy implications for using CPTED in Wentworth and other communities

National and provincial policies that incorporate CPTED should be translated into local implementation strategies. Implementation must be site specific and encompass partnership amongst all levels of government, crime structures and communities.

There must be increased partnerships, communication and capacity building for government officials, especially between town planners and crime practitioners, for successful implementation of CPTED.

iii) Future use of CPTED in Wentworth and South Africa

Service delivery within Wentworth, pertaining to upgrading or provision of community facilities, adequate housing, maintenance of the physical environments and so forth is lacking. Addressing these problems will indirectly reduce crime and vulnerability and directly uplift the life of residents. Implementing CPTED through service delivery initiatives in Wentworth is highly recommended. This is a multi-disciplinary and holistic approach (as it focuses on crime and broader urban sustainability) for reducing crime, creating more liveable environments and improving the quality of life.

Although CPTED can serve as a workable option for crime prevention and reduction in communities like Wentworth, its negative and positive aspects must be considered in all developments. In SA, implementation and research is still evolving. Guidance on

implementation, roles and responsibilities should be drawn from international exploration and practice, but applied within a local context.

5.8 CONCLUSION

Fear, crime and the environment are inextricably intertwined. Understanding these complexities requires an analysis of poverty, planning and design, social cohesion, demographics and actual crime. Changing the physical environment using various mechanisms will assist in reducing crime. Some studies refer to CPTED as a strategy to achieve this, while others use specific theories, such as defensible space and broken windows. The principles of CPTED include aspects of planning and design and are therefore considered a holistic approach for improving quality of life through crime prevention, and for addressing both actual and perceived security concerns.

This study has shown that apartheid planning and design continues to influence victimisation and vulnerability in the Wentworth community. The poor layout of the community has created pockets of problems within the physical and built environment that have become associated with crime. Furthermore, the juxtaposition of these communities with industry and major transport routes induce crime and reduce the quality of life. The structure and location of Wentworth is unable to accommodate the rapid growth in population. While local government has implemented various measures to socially address these problems, they still lack the knowledge and understanding to implement spatial initiatives to reduce crime levels.

Given that the CPTED model incorporates a management of environments approach, supporting green sustainability, it can be utilised to address a host of socio-developmental issues, beyond crime prevention. CPTED was developed as an idea that the design of the environment could enhance or reduce offending. This study has demonstrated that since its initial inception, the model has been reinvented to address and suit the changing nature of crime and society. The use of CPTED in urban renewal and regeneration projects, which

focus on broader service delivery (and also indirectly incorporate crime prevention) is a more holistic and integrative method for implementing the model.

Evidently, crime prevention must consider planning and design, and vice versa. Yet for SA, the question that remains is; how can CPTED be applied in the context of apartheid legacy communities, with a vision for democratic development strategy. As discussed in this study, the model has positive and negative consequences. Some aspects of CPTED can reduce and possibly prevent crime and vulnerability. On the other hand, incorporating the model in the existing apartheid infrastructure may be an obstacle. To overcome this problem, practitioners need to ensure that proper evaluation of criminality and the environment is undertaken before using the model. Practitioners need to also ensure that residents are consistently a part of the crime prevention efforts and initiatives undertaken within communities.

Crime prevention within Wentworth is tense and community members are constantly at loggerheads with government to provide quick and efficient solutions (Rondganger, 2011). Preventative initiatives need to address existing criminal elements, and other socio-economic issues to achieve long-term success. This process requires, innovative and sustainable prevention strategies, which encourage participation and partnership between all stakeholders, specifically with local government and communities (White Paper on Safety and Security 1998; White Paper on Local Government, 1998; NCPS, 1996).

The positive response from Wentworth residents for alternative crime prevention approaches such as CPTED, coupled with the mapping of crime, indicates that CPTED is a viable option for Wentworth. While the model can be successfully implemented within the community, it is important to note that only certain principles may be feasible for application (as discussed). Successfully implementing CPTED in Wentworth requires innovative approaches to using the model and consultation and participation with local communities.

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APPENDICES

APPENDICES ONE: Images used to illustrate the relevance and use of CPTED



Plate 2.1 Residential home which is aesthetic appeal (Kruger, 2005a)



Plate 2.2 Residential home that lacks aesthetically pleasing (Kruger, 2005a)



Plate 2.3 Illegal dumping and build-up of garbage (Kruger, 2005a)



Plate 2.4 Clean parks and recreational areas (Kruger, 2005a)



Plate 2.5 Residential home with burglar wall fencing (Kruger, 2005a)



Plate 2.6 Residential home with high stone bar fencing (Kruger, 2005a)



Plate 2.7 Vacant open space serving as ways linking residential areas (Kruger, 2005a)

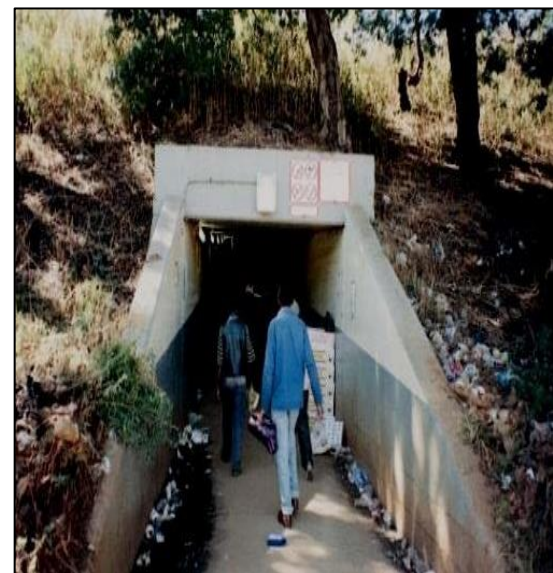


Plate 2.8 Vulnerable covered tunnel walk an access/escape routes (Kruger, 2005a)

APPENDICES TWO: Research Questionnaire

CONSENT FORM

Project Title: Environmental design, crime and vulnerability: a case study of Wentworth

Aims: The study aims to explore how design and planning of the physical environment, can influence safety and reduce vulnerability within certain environments, through the implementation of the crime prevention through environmental design (CPTED) model.

Outcomes: The study will contribute towards the development of crime prevention policy, as well as impact on a holistic understanding and practical implementation of the CPTED model. A further outcome would be the initiation of a CPTED project to be implemented within the community.

Researcher: Raencine K. Aboo

Degree for Master of Research in Geography and Environmental Sciences

0744229232/205518210@ukzn.ac.za

South Durban Basin (SDB) Area Based Management (ABM) Intern

PRO SDB Community Safety Forum (CSF)

Supervisor: Professor Brij Maharaj

Head of School

School of Geography and Environmental Science

033-2605273/ maharajb@ukzn.ac.za

University of KwaZulu Natal, Howard College

Time: 10-15 minutes

Storage of data: All data collected will be stored under strict supervision by the supervisor for a period of five years. Subsequent copies will be stored by the researcher.

I hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT

DATE

.....

.....

****The signing of this form assures you, the participant, the highest degree of anonymity and confidentiality (unless otherwise stated).**

If you wish to obtain information on your rights as a participant, please contact Ms Phumelele Ximba, Research Office, UKZN, on 031 360 3587.

PLEASE COMPLETE ONLY IF YOU ARE A RESIDENT OF WENTWORTH/AUSTERVILLE

Instructions: Please tick or answer in the space provided

1. Demographics

1.1. Age?	
1.2. Sex?	
1.3. Race?	

2. Crime

2.1. Do you feel safe in your community?

Yes	
No	

2.3. Do you feel safe at...?

	Yes	No
Night		
Day		

2.4. Have you been a victim of crime?

Yes	
No	

If yes what crime

2.5. Does crime affect the way in which you engage in your community?

Yes	
No	

2.6. Does crime affect your social relationships with friends, family, neighbours?

Yes	
No	

2.7. In your community, which crimes are:

If other please specify

	most prevalent?		you most afraid of?	
	Yes	No	Yes	No
murder				
sexual violence				
hijacking				
robbery				
house break ins				
loss of life				
physical injury				

2.9. Are there crime “hotspots” (areas of high crime) in your community?

Yes	
No	

If yes then please list the places/roads/areas (for the mapping process)

3. Crime and design

3.1. Do you think apartheid planning and design impacts on?

	Yes	No
existing planning and design problems		
existing crime problems		

3.2. Do you think the design and planning of your community affects crime?

Yes	
No	

3.5. Do you think that management of the physical environment?

	Yes	No
impacts on social/community development		
can help to reduce crime		

3.3. Do you think that the following can?

	affect crime		make you fearful of being a victim	
	Yes	No	Yes	No
no lighting at night				
overgrown trees, grass, bush				
vacant spaces				
areas which are neglected				
dark, lonely areas				
access and escape routes for criminals				
no fencing/walls around spaces where crime is high				
community attitudes/response to crime				

3.5. Can you provide a list of places/roads/areas where the above problems exist (for the mapping process)?

4. Crime prevention through environmental design

4.1. Do you think that the re-designing and planning of certain areas can reduce crime?

Yes	
No	

4.2. Will you be willing to “passively” watch your area and report crime?

Yes	
No	

4.3. Do you think target hardening will reduce crime in your community (fences, walls, burglar guards)?

Yes	
No	

4.4. Do you think the use of CCTV camera systems will reduce crime in your community?

Yes	
No	

4.5. Do you think that by improving the look of your community (green spaces, recreational areas, trees, flowers, and clean spaces) can reduce crime?

Yes	
No	

4.6. Do you think that uplifting neglected and dilapidated building and areas in your community will reduce crime?

Yes	
No	

4.7. Do you think that the Crime Prevention through Environmental Design model (all the questions mentioned above) is a possible crime prevention option in reducing crime?

Yes	
No	

4.8. Do you think that current crime prevention initiatives (such as programs addressing substance abuse, violence, youth violence...etc) are enough to address crime in your community?

Yes	
No	

4.9. Do you think that local government is actively engaging in crime prevention in your community?

Yes	
No	

4.10. From the above mentioned would you support the Crime Prevention through Environmental Design model as a crime prevention strategy for your community?

Yes	
No	

APPENDICES THREE: Acknowledgement of Participation in the research by Churches



UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

ACKNOWLEDGEMENT OF PARTICIPATION IN RESEARCH

Masters Research: Environmental Design, Crime and Vulnerability: A Case Study of Wentworth

This hereby serves to confirm that Ms Raencine Kathlyn Aboo (205518210) was granted access and permission to carry out research at the specified organisation/office/institution.

All questionnaires, interview schedules and other instruments were reviewed before commencing the data collection process. These instruments did not contain any inflammatory or overtly sensitive material that would have put any persons (adults or children) at risk.

Organisation/office/institution:

AUSTERVILLE CONGREGATIONAL CHURCH
71 ASSEGAI ROAD, AUSTERVILLE, 4091 DURBAN.
Tel. 031-208 4633 - Naika@ukzn.ac.za
Authorised by: 078 118 4221

Rev. JOSEPH LEON NAIKA (570327 5035 081)

Official stamp (where applicable):

Can be contacted at UKZN
in the SRPC at Room 111(b)
or 031-260 5388

The United Congregational Church of Southern Africa



BETHEL & AUSTERVILLE JOINT PASTORATE

Rev. Joey Naika
Minister

71 Assegai Road
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E-Mail: austervillecong@gmail.com
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23 Rippon Road
Sydenham, Durban, 4091
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INYUVESI
YAKWAZULU-NATALI

ACKNOWLEDGEMENT OF PARTICIPATION IN RESEARCH

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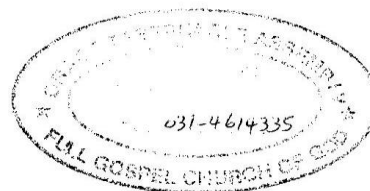
Organisation/office/institution:

Grace Tabernacle Church

Authorised by:

Dr. K. T. Mufamadi

Official stamp (where applicable):





ACKNOWLEDGEMENT OF PARTICIPATION IN RESEARCH

Masters Research: Environmental Design, Crime and Vulnerability: A Case Study of Wentworth

This hereby serves to confirm that Ms Raeneine Kathlyn Abou (205518210) was granted access and permission to carry out research at the specified organisation/office/institution.

All questionnaires, interview schedules and other instruments were reviewed before commencing the data collection process. These instruments did not contain any inflammatory or overly sensitive material that would have put any persons (adults or children) at risk.

Organisation/office/institution:

Miracle Ministries International

Authorised by:

V.G. Simah

Official stamp (where applicable):

APPENDICES FOUR: Acknowledgement of Participation in the research by Fairvale Secondary School



ACKNOWLEDGEMENT OF PARTICIPATION IN RESEARCH

Masters Research: Environmental Design, Crime and Vulnerability: A Case Study of Wentworth

This hereby serves to confirm that Ms Raencine Kathlyn Aboo (205518210) was granted access and permission to carry out research at the specified organisation/office/institution.

All questionnaires, interview schedules and other instruments were reviewed before commencing the data collection process. These instruments did not contain any inflammatory or overtly sensitive material that would have put any persons (adults or children) at risk.

Organisation/office/institution:

FAIRVALE SECONDARY SCHOOL

TEL: 031 468 4409 FAX: 031 468 6582
Certified a true copy of the original

Authorised by:

.....
D.C. SEIDLE
EX-OFFICIO: COMMISSIONER
OF OATHS

Official stamp (where applicable):



APPENDICES FIVE: Interview Schedule

CONSENT FORM

Project Title: Environmental design, crime and vulnerability: a case study of Wentworth

Aims: The study aims to explore how design and planning of the physical environment, can influence safety and reduce vulnerability within certain environments, through the implementation of the crime prevention through environmental design (CPTED) model.

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Researcher: Raencine K. Aboo

Degree for Master of Research in Geography and Environmental Sciences

0744229232/205518210@ukzn.ac.za

South Durban Basin (SDB) Area Based Management (ABM) Intern

PRO SDB Community Safety Forum (CSF)

Supervisor: Professor Brij Maharaj

Head of School

School of Geography and Environmental Science

033-2605273/ maharajb@ukzn.ac.za

University of KwaZulu Natal, Howard College

Time: 10-15 minutes

Storage of data: All data collected will be stored under strict supervision by the supervisor for a period of five years. Subsequent copies will be stored by the researcher.

I hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT

DATE

.....

.....

****The signing of this form assures you, the participant, the highest degree of anonymity and confidentiality (unless otherwise stated).**

If you wish to obtain information on your rights as a participant, please contact Ms Phumelele Ximba, Research Office, UKZN, on 031 360 3587.

Use of personal details

1. Do you agree to have your name, position and organization/department used in the research?
2. Do you agree to have these details used if there is any publication of the research or parts of it?

Interview Questions

1. What crime prevention projects are you currently engaging in?
2. Does CPTED feature in any current crime prevention projects you're working on?
3. Have you ever come across or engaged with other departments, which incorporate CPTED into their crime prevention initiatives?
4. Have you engaged with policy and legislation around CPTED?
5. How prevalent is crime within Wentworth?
6. Can CPTED be viewed as a viable option to addressing crime and perceptions of crime within the Wentworth community?
7. Do you think apartheid planning and design to create segregation has had a negative impact on crime in the community?
8. Do you think that CPTED can fit into the existing physical environment?
9. Communities play a vital role in the CPTED approach by being responsible for crime and management of their own environments; in your opinion do you believe that the community is ready for this?
10. Can CPTED run alongside other crime prevention initiatives?
11. CPTED is complex as it addresses a spectrum of issues beyond planning, design and management of the physical environment, is local government ready to initiate a model like this?

Thank you for your participation

APPENDICES SIX: Acknowledgement of Participation in the research by the SDB ABM, and permission for use of information



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INYUVESI
YAKWAZULU-NATALI

ACKNOWLEDGEMENT OF PARTICIPATION IN RESEARCH

Masters Research: Environmental Design, Crime and Vulnerability: A Case Study of Wentworth

This hereby serves to confirm that Ms Raencine Kathlyn Aboo (205518210) volunteered and interned at the specified office for the duration of July 2010 – June 2013. Ms Aboo was a member of the South Durban Basin (SDB) Community Safety Forum (CSF) and her research addressed a gap in crime prevention for the SDB and informed projects relating to environmental design and crime. Ms Aboo was granted access and permission to carry out research and use any documents or information (considered public records) arising from the SDB CSF or the specified office that was relevant to her research.

All questionnaires, interview schedules and other instruments were reviewed before commencing the data collection process. These instruments did not contain any inflammatory or overtly sensitive material that would have put any persons (adults or children) at risk.

Organisation/office/institution:

SOUTH DURBAN BASIN AREA BASED MANAGEMENT
(SDB ABM)

Authorised by:



Official stamp (where applicable):

**South Durban Basin
Area Based Management
Catalyst for Change
398 Bluff Road
Jacobs, 4052
Tel: 031 - 4519800**

APPENDICES SEVEN: Ethical Clearance

From : Suzette Van Der Westhuizen <Vanderwesthuizens@ukzn.ac.za> 12/12/11

To: Raencine, Brij

Re: Masters Proposal: Environmental design, crime and vulnerability: A case study of Wentworth.

This is to advise that the Faculty Higher Degrees, Research and Ethics committee approved your research proposal and request for ethical clearance, and that you may proceed with your research project.

This permission is subject to review by the University Research Committee, who will be sending you a letter in due course.

Suzette van der Westhuizen
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